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ABSTRACT

This manual was written to help educators with little or no experience to create a tech prep program. The guide presents a step-by-step process for planning, development, and implementation of the program. The manual contains 10 chapters organized in 4 sections. The two chapters of the first section introduce tech prep, provide a rationale for tech prep and explain the tech prep program. In the second section, three chapters contain information about the planning phase, explaining the tech prep consortium, defining the tech prep program, and providing organizing tips for the program. The three chapters of the third section covers the implementation phase of a tech prep program, including inservice education for teachers, curriculum changes, and involving business and industry. The final section contains two chapters on implementing the tech prep program, with information about promotion and evaluation. Four appendixes contain definitions, a list of 19 resources, a tech prep checklist, and a list of core proficiencies. (KC)

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PLANNING *for* TECH PREP

A Guidebook for School Leaders

Carol Fagan
Dan Lumley

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PLANNING FOR TECH PREP:

A Guidebook for School Leaders

By
Carol Fagan
and
Dan Lumley

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On a more personal note, Carol Fagan would like to thank J. Riffel for advice and counsel, and G. Ross for support and patience. Saving the best for last, I thank my parents, who helped me understand that I can do anything.

INTRODUCTION

Students must be provided with the skills necessary for success in the workforce.

Being successful in the workforce is one of the challenges facing twentieth-century educators. We have been told that education is not producing an acceptable product. Our critics claim that graduates lack basic skills, workplace skills, and a sense of responsibility. The key to solving this problem does not lie in blaming, but in understanding how we got to where we are and forging a path onward.

A Tech Prep program can provide a map for educators who want to change the way they do business. It is not, however, a program for folks who are "about to retire." The initiative requires planning, organization, and much endurance. We are confident, however, that the benefits are well worth the efforts.

This manual is written to help educators with little or no experience in Tech Prep. We present a step-by-step process for the planning, development, and implementation of the program. We have provided samples of letters, overhead transparency masters, sequences of courses, articulation agreements, etc., in the hope that they will provide some assistance to you in your own reform efforts. You must be aware that this manual is not comprehensive. We strongly urge you to consult the many resources available on Tech Prep. This manual should be used as a starting point.

We make the following suggestions to our readers:

1. Use this manual as one of your resources.
2. Consult the materials we have included in the resource list in Appendix B (and look for others).
3. Talk to anyone who is working on Tech Prep.
4. Listen to futurists talk about tomorrow.
5. Keep current with the demographic changes of the workforce and student population.
6. Adapt ***everything*** for your local situation.

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A MAP OF THE BOOK

Introduction to Tech Prep

CHAPTER 1
The Need for a Tech Prep Program

CHAPTER 2
Understanding the Tech Prep Program

The Planning Phase

CHAPTER 3
The Tech Prep Consortium

CHAPTER 4
Defining the Tech Prep Program

CHAPTER 5
Organizing the Tech Prep Program

The Development Phase

CHAPTER 6
Inservice

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Involving Business and Industry

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Introduction to Tech Prep

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CHAPTER 7
Curriculum Changes

CHAPTER 8
Involving Business and Industry

The Implementation Phase

CHAPTER 9
Promoting the Tech Prep Program

CHAPTER 10
Evaluating the Tech Prep Program

CHAPTER ONE

The Need for a Tech Prep Program

Changes in the Workplace

The Current Focus of Education

How Tech Prep Can Make a Difference

If Horace Mann were to walk the halls of a typical twentieth-century school, he would feel at home among the paper, pencils, chalkboards, and textbooks. He would quickly recognize students recalling facts from short-term memory, a curriculum segregated into separate subjects, standardized tests, and teachers playing the role of the "sage on the stage," pouring facts into empty vessels. On the other hand, if Horace Mann were to visit a modern business or organization, he would probably feel lost among the technology and in the workplace climate. Schools are in a precarious position because they have not kept pace with workplace changes. While organizations and businesses have been going through a metamorphosis, education is still mired in nineteenth-century curriculum and instructional patterns.

School leaders must create change within the educational system. The United States must produce graduates who can perform effectively in the changing global workplace. In order to do this, we must understand recent trends. Only then can we begin to build a system that will accomplish our goal. Not only must leadership be evident at all levels of the educational system, but cooperation must exist among these levels. Primary, secondary, and postsecondary schools must work together in order to accomplish the goal of producing a workforce for today and tomorrow. Tech Prep is a program that links secondary education, postsecondary education, and the workplace. It is one way to present students with a pathway to their future.

Changes in the Workplace

Several changes have impacted the need for school reform. One is an increase in workplace technology coupled with the growth of midlevel technical careers. A second change is a shift in the level of education required, and, finally, the third is a shift in the role of the employee.

WORKPLACE TECHNOLOGY AND GROWING MIDLEVEL TECHNICAL CAREERS

There has been a shift in the workplace from unskilled to skilled employment. The chart on page 9 illustrates this shift over time.

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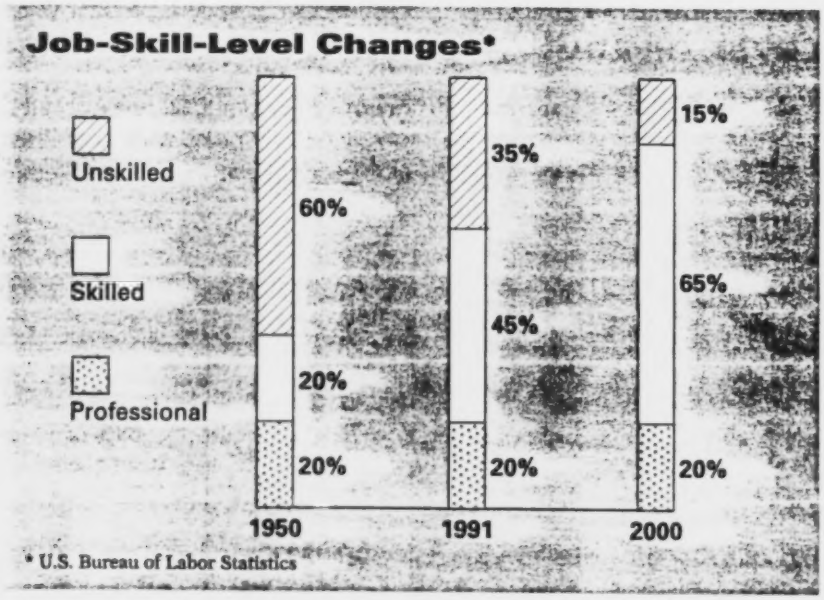

Three conclusions are clear from the chart on job-skill-level changes:

1. The percentage of unskilled jobs is decreasing.
2. The percentage of skilled jobs is increasing.
3. The percentage of professional jobs is remaining constant.

The shift from unskilled to skilled jobs is primarily a result of the increasing use of technology in the workplace. Every employment sector has been impacted by this shift. Examples of the shift from unskilled to skilled jobs are identified below.

- Agriculture has moved from the plow to hydroponics and bioengineered foods.
- Manufacturing has shifted from manual labor to robotics.
- Service has shifted from a "paper-packed" workplace to a computer-driven environment.

Jobs in every sector of the labor market are being shifted from unskilled to skilled by the influx of technology. As this shift occurs, the need for technical education increases.

UNSKILLED JOBS + TECHNOLOGY = SKILLED JOBS

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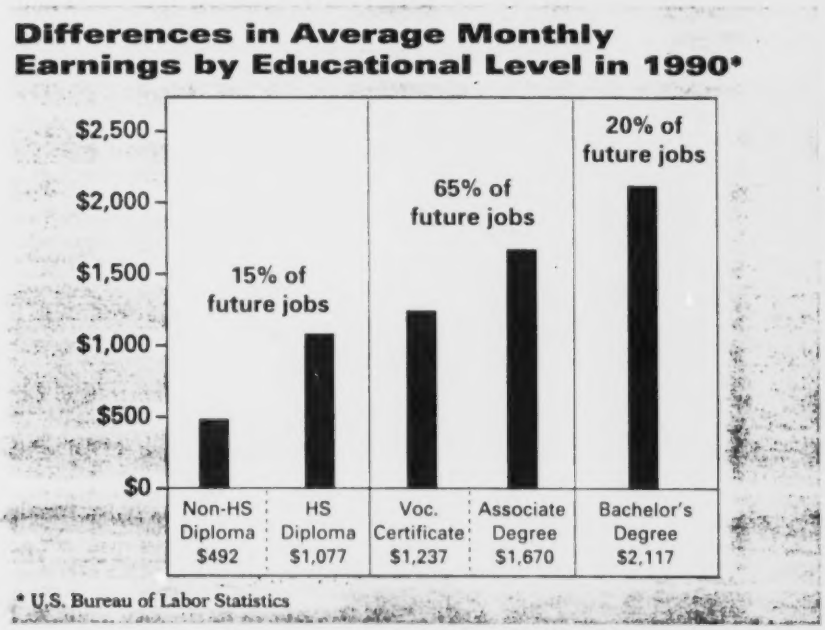
LEVEL OF EDUCATION REQUIRED FOR WORK

A second shift occurring is one that has altered the level of education required for employment. The chart below illustrates education levels required for each of the unskilled, skilled, and professional job groupings identified on page 9.



It is clear from this chart that a majority of jobs for the future will be at the vocational certificate and associate degree level (65 percent). The fewest opportunities for future jobs exist at the lowest education level—high school or less (15 percent) .

THE CHANGING ROLE OF THE EMPLOYEE

The third workplace shift focuses on the role of the employee. Organizations now expect employees to be active members of the workplace team. Techniques such as total quality management require employees to be directly involved in solving problems in the workplace. Employees are expected to "bring their brains to work" rather than "check them at the door."

The skills today's workers need were identified in a 1988 report entitled *Workplace Basics: The Skills Employers Want.* These skills are identified in the box on the following page.

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The New Basic Skills[1]

- Learning to Learn
- Reading, Writing, Computation
- Listening and Oral Communication
- Creative Thinking and Problem Solving
- Personal and Career Development
- Negotiation and Teamwork
- Organizational Effectiveness

Another important publication produced in 1991 by the Secretary's Commission on Achieving Necessary Skills (SCANS) called for teaching the same types of skills. The SCANS report recommended a three-part foundation of skills as well as five competencies. These recommendations are listed below.

SCANS

A THREE-PART FOUNDATION[2]

Basic Skills
Reads, writes, performs arithmetic and mathematical operations, listens, and speaks

Thinking Skills
Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn, and reasons

Personal Qualities
Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

FIVE COMPETENCIES

Resources
Time, money, material and facilities, human

Interpersonal
Team, teaching, serves clients, leadership, negotiates, works with diversity

Information
Acquires and evaluates, organizes and maintains, interprets and communicates, uses computers to process information

Systems
Understands, monitors and corrects performance, improves or designs

Technology
Selects, applies, maintains and troubleshoots

[1]Carnevale, Anthony P., Leila J. Gainer, and Ann S. Meltzer. *Workplace Basics: The Skills Employers Want.* (Washington, D.C.: The American Society for Training and Development. U.S. Department of Labor Employment and Training Administration, 1988), 9.

[2]Secretary's Commission on Achieving Necessary Skills. *What Work Requires of Schools: A SCANS Report for America 2000.* (Washington, D.C.: U.S. Department of Labor, 1991), xvii–xviii.

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The Current Focus of Education

If we are to respond to the changing workplace, we must do two things: produce more qualified workers and educate all students. In order to do this, we must change the status quo. Below is a diagram that illustrates the current system of education at many high schools.

HIGH SCHOOL COURSES	POST-HIGH-SCHOOL GOAL
College Preparatory	Four-Year University/College
Vocational Education	Employment
General Education*	?

* These students are often referred to as the neglected majority.[3]

Most educators are familiar with the three tracks in the diagram above. However, they often deny that such "tracks" exist within their own school. There is usually a definite sequence of courses suggested for college preparatory and vocational students. General education students, however, typically drift along without direction.

Regardless of which high school course sequence a student takes, he or she is at a disadvantage in the job market and the workplace. College preparatory students lack specific skill knowledge, vocational students lack the theoretical foundations and the requirements for promotion, and general education students lack specific skill knowledge, promotability, and the theoretical foundations of subject areas.

Students who enroll in college preparatory courses are generally well equipped to enter a four-year college or university. These students usually have no skill training because their curriculum emphasizes theory rather than application.

Students who enroll in vocational courses are well equipped to enter the workforce in a specific career. The curriculum in the vocational courses focuses on the application of content rather than theoretical foundations. Vocational students are able to obtain employment; however, they must often return to formal education to receive a degree and advance their careers.

Students who enroll in general education courses are not equipped to enter a four-year college/university, nor are they able to obtain work in a "skilled" position. General education courses provide, in many cases, the path of least resistance. These students do not receive skill training or theoretical foundations within the curriculum. They see little relevance to their education and are therefore not motivated to perform.

[3]Parnell, Dale. *The Neglected Majority* (Washington, D.C.: The Community College Press, 1985). Chart adapted from Hull, Dan, and Dale Parnell. *Tech Prep Associate Degree: A Win/Win Experience*. (Waco, Texas: CORD Communications, 1991), 41.

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WHAT HAPPENS TO HIGH SCHOOL GRADUATES?

A longitudinal study conducted by the Educational Testing Service estimates that approximately half of all high school graduates enroll in a four-year degree program immediately after high school. The box below illustrates what typically happens to students in the years following high school.

What Happens to High School Graduates?*

1980	55% enter a four-year college/university
	45% do not enter college
1982	31% are still enrolled in college
	67% are no longer enrolled in college
1987	24% receive a bachelor's degree
	8% arts and sciences
	16% professional fields
	76% did not receive a degree

* Longitudinal study by ETS.[4]

How Tech Prep Can Make a Difference

Tech Prep is a program that responds to the changing needs of the workplace. Students are prepared to use technology and to work in the growing field of midlevel technical careers. The program focuses students toward a two-year degree or certificate and provides training in workplace skills.

The box on page 14 briefly compares the traditional classroom and a Tech Prep classroom.

[4] Policy Information Center, Educational Testing Service, *Performance at the Top: From Elementary Through Graduate School* (Educational Testing Service, 1991), 29.

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TRADITIONAL CLASSROOM	TECH PREP CLASSROOM
Courses selected at random.	Courses selected from sequence of courses.
Teacher plays a "sage on the stage."	Teacher plays a facilitator for students.
Courses are presented as stand-alone.	Courses integrated with many subjects.
Workplace skills are not covered.	Workplace skills within the curriculum.
Students have little or no career focus.	Students select a career cluster to pursue.
Teachers work in isolation.	Teachers work in teams.

Tech Prep is a program that puts many pieces of the reform puzzle together, accomplishing the following:

- Allows students to take challenging coursework
- Encourages teachers to use applied and integrated teaching strategies
- Provides a smooth transition to postsecondary education programs
- Allows all students to benefit from these changes

Tech Prep can create as much or as little reform as you make happen. This manual will help you create a Tech Prep program designed for your students, teachers, staff, and community.

A LOCAL PERSPECTIVE ON TECH PREP

The school districts within the Tech Prep Associate Degree Consortium of Johnson/Douglas Counties have been working on Tech Prep for three years and are observing the following changes:

- Increased student motivation
- Increased teacher motivation
- Supportive parents and media
- Increased self-concept in students
- Higher expectations of students
- Higher academic performance among students

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CHAPTER TWO

Understanding the Tech Prep Program

What Is a Tech Prep Program?

How Will a Tech Prep Program Help Students?

Essential Roles in a Tech Prep Program

What Is a Tech Prep Program?

If you asked seven different people what a Tech Prep program is, you might receive seven different answers. There are, however, some components that appear consistently in Tech Prep programs. The components listed below and discussed in the following pages provide a detailed definition of a Tech Prep program.

The Components of a Tech Prep Program

1. Course sequences
2. Course sequences built around careers or career clusters
3. Three levels of proficencies (core, technical, and specialty)
4. Secondary and postsecondary curriculum
5. Application-based teaching strategies
6. Integration of disciplines and subjects
7. Involvement of business and industry

COURSE SEQUENCES

The Tech Prep course sequence begins in high school and extends into postsecondary education. Typically, the sequence begins in grade 9 and extends through grade 14. Both academic and technical courses are included in the sequence required of Tech Prep students.

Secondary				Postsecondary	
9	10	11	12	13	14

COURSE SEQUENCES BUILT AROUND CAREERS OR CAREER CLUSTERS

A career cluster usually includes a variety of related occupations. Typical career clusters found in Tech Prep include engineering technology, health services, business and information technology, human services, industrial technology, and agricultural technology. Career clusters should be identified based on labor market trends. Tech Prep should build education programs in career clusters that show growth patterns in the employment market.

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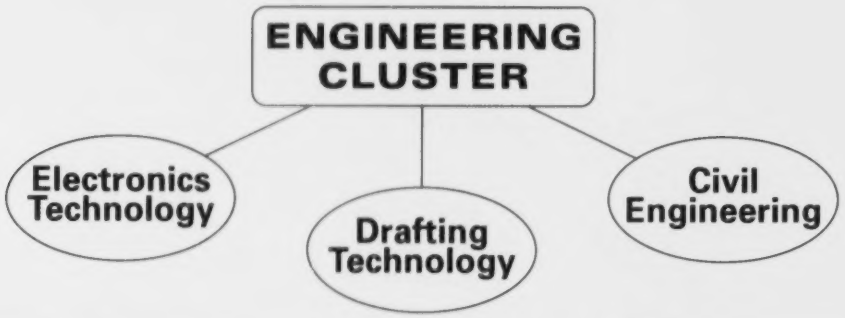
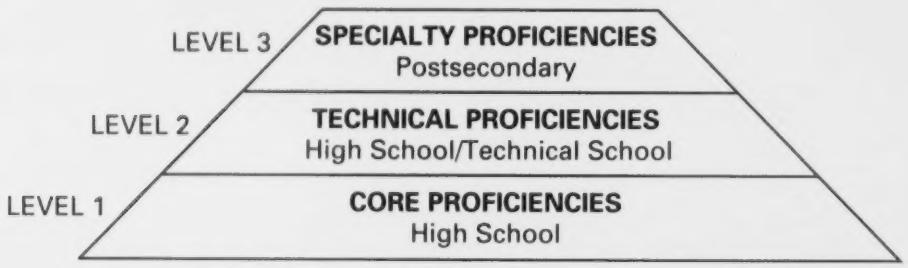


LEVELS OF PROFICIENCIES

Tech Prep programs are typically built around three levels of proficiencies.[5] These proficiencies are taught across the high school, technical school, and college curricula. Level 1 consists of core proficiencies, Level 2 consists of technical proficiencies, and Level 3 consists of specialty proficiencies. The proficiency levels are as follows:



LEVEL 1: CORE PROFICIENCIES

The first set of proficiencies is typically taught at the high school level. Some people consider these proficiencies "basic skills" for tomorrow's workplace. ***The core proficiencies include mathematics, science, communication, and technology.*** Some Tech Prep programs add workplace and career development proficiencies to this list. All Tech Prep students focus on the same core proficiencies regardless of the career or career cluster in which they have interest.

LEVEL 2: TECHNICAL PROFICIENCIES

The second set of proficiencies can be taught at either the high school, technical school, or college level. Where these proficiencies are taught will depend on the technical programs available within your consortium schools. ***Technical proficencies introduce students to a career area by providing introductory skill instruction.*** For

[5]Chart adapted from Hull, Dan, and Dale Parnell. *Tech Prep Associate Degree: A Win/Win Experience.* (Waco, Texas: CORD Communications, 1991), 56.

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example, students interested in an engineering career might attain technical proficiencies in drafting or electronics at this level of the program. Students interested in a career in business might attain technical proficiencies in computer applications at this level. This is usually the first opportunity students have to explore specific careers without having to make a commitment to one in particular.

LEVEL 3: SPECIALTY PROFICIENCIES

The third set of proficiencies is taught solely at the technical school or college level. ***Specialty proficiencies provide the students with skill training for an occupation.*** For example, engineering students might attain skills in advanced computer-aided drafting and design while students in a business cluster might work on advanced office management proficiencies. These courses provide the specific skills needed for entrance into the workforce.

SECONDARY AND POSTSECONDARY CURRICULA

The three proficiency levels are taught within courses at high school and postsecondary institutions. The core proficiencies are taught at the high school level. Technical proficiencies are taught at the high school and/or technical school level. The specialty proficiencies are covered at the postsecondary level. Coordination between the high school and postsecondary school is essential to ensure that courses are not duplicated and that students have the necessary skills to enter the program at the postsecondary level.

APPLICATION-BASED TEACHING STRATEGIES

Tech Prep programs build curriculum around the blending of academic and technical learning. ***When academic and technical courses are blended, students see connections between the classroom and the world of work.*** Students in a math class, for example, begin to understand how the skills they are learning are used on the job.

INTEGRATION OF DISCIPLINES AND SUBJECTS

Tech Prep curriculum builds strong ties among disciplines and subjects. Two specific integration levels are stressed in Tech Prep programs. First, students must understand how components within subject areas are related to each other. For example, how are chemistry, physics, and biology related, or how is algebra related to geometry and statistics? Second, students must understand how disciplines are related to each other. Here we are referring to the relationships

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between physics and music or between science and mathematics. Tech Prep students leave high school with one large box containing knowledge and skills rather than separate boxes entitled geometry, biology, language arts, etc.

INVOLVEMENT OF BUSINESS AND INDUSTRY

One of the major goals of Tech Prep is to increase linkages between education and business. ***Involving business and industry representatives in the Tech Prep program is important to building a strong work-based curriculum***. Business representatives can be involved in Tech Prep in a variety of ways.

How Will a Tech Prep Program Help Students?

Most programs have just begun to collect data on the impact of Tech Prep. Practitioners often cite the following benefits as resulting, at least in part, from their Tech Prep programs.

Tech Prep programs are designed to . . .

RAISE THE ACADEMIC PERFORMANCE LEVELS OF STUDENTS IN MATHEMATICS, ENGLISH, TECHNOLOGY, AND SCIENCE

Many students stop taking math and science courses in their sophomore year of high school. Most students never take technology-related courses. By requiring students to enroll in more math, science, and technology courses and by teaching those courses using applied teaching strategies, we can raise the students' academic performance.

INCREASE STUDENT MOTIVATION TO LEARN

Tech Prep courses present concepts by grounding them in workplace application. When students begin to understand how mathematics, for example, is used outside the classroom, they stop asking, "When am I ever going to use this?" and become involved in learning.

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CONNECT HIGH SCHOOL WITH COLLEGE BY PROVIDING A COORDINATED SEQUENCE OF COURSES

Tech Prep programs build sequences of courses that begin in high school and culminate with a two-year postsecondary degree or certificate. These sequences provide a smooth transition for students from high school to college and assure that coursework is not duplicated. When programs are coordinated in this manner, students are prepared for the next level of education.

DECREASE DROPOUT RATES OF HIGH SCHOOL STUDENTS

When used to replace general education, Tech Prep programs help reduce the number of high school dropouts. The Tech Prep program provides direction that students often do not have in the general education program. This direction helps students stay focused and in school.

INCREASE STUDENTS' PREPAREDNESS TO ENTER COLLEGE DEGREE PROGRAMS (TWO- AND FOUR-YEAR)

As Tech Prep students progress through the recommended sequence of courses, they will attain high levels of mathematics, science, and technology skills. Because the course sequence has been jointly designed by both high school and college faculty, students are well prepared to enter the postsecondary programs. Tech Prep students will bypass the remedial courses offered in many postsecondary institutions.

INCREASE THE SKILL LEVELS OF GRADUATES

As Tech Prep students enter the postsecondary portion of the program, they will be entering with high-level math, science, and technology skills. The postsecondary institutions may then raise their program content level. Raising the content covered in postsecondary degree programs will allow students to attain higher skill levels at the completion of the program.

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PROVIDE AGE-APPROPRIATE SCHOOL-TO-WORK TRANSITION ACTIVITIES IN COLLABORATION WITH AREA EMPLOYERS

Involving business and industry representatives in Tech Prep will help teachers build a work-based curriculum and help students learn about the careers in which they are interested. Students should have the opportunity to investigate and explore various careers as they move from junior high or middle school to high school and on into postsecondary education.

INCREASE THE NUMBER OF POTENTIAL EMPLOYEES FOR THE LOCAL WORKFORCE

Tech Prep graduates provide skilled labor for the local economy. Because the program is developed and implemented with the involvement of local business and industry representatives, the students' skills and knowledge base are current.

PROVIDE INFORMATION ON CAREER OPPORTUNITIES AVAILABLE TO COMMUNITY COLLEGE GRADUATES

Tech Prep focuses attention on careers of the future and the skills necessary to succeed. The U.S. Department of Labor predicts that 80 percent of future new jobs will require less than a bachelor's degree. Providing current career and labor market information helps students and parents make appropriate career decisions.

Essential Roles in a Tech Prep Program

It is essential to have many people involved in a Tech Prep program. The following section suggests specific roles for some personnel within Tech Prep. This is not a comprehensive list of roles. For organizational purposes we have divided these roles into consortium, secondary education, and postsecondary education categories.

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CONSORTIUM ROLES

COORDINATOR/DIRECTOR

Caution!
It is impossible for the director of the program to implement Tech Prep alone.

The Tech Prep director focuses on organizing and coordinating the consortium activities. A common mistake is for a consortium to hire a director and believe the director will create a program. It is impossible for the director to implement Tech Prep alone. ***The director cannot create change within each school; that must be done by local school personnel.***

SECONDARY EDUCATION ROLES

SUPERINTENDENT/ASSISTANT SUPERINTENDENT

The superintendent may serve on the steering committee (Chapter 3) and provide visibility for the program within the home district. This might be done by keeping the school board and community informed and involved with Tech Prep efforts. The superintendent should also stay in communication with other Tech Prep consortium administrators.

CURRICULUM DIRECTOR

The curriculum director within a school district should serve a major role in the development of Tech Prep at the local level. This person should serve on the curriculum work team as well as the action team (Chapter 5).

PRINCIPAL

The principal should provide leadership within the high school to keep Tech Prep efforts moving. The principal may serve as chairperson of the building team and as a member of the district action team (Chapter 5). Providing support for teachers who work on curriculum or articulation is also an important role for the principal. Encouraging teachers and staff to be creative and supporting that creativity is crucial to making the program work.

TEACHERS

Teachers serve as members of the district action team and the building team (Chapter 5). In this capacity, they should plan the district/building efforts for Tech Prep.

COUNSELORS

Because counselors often serve as enrollment gatekeepers, they must understand and support the curriculum changes being made. Counselors can also provide some career development for students; however, they should not be responsible for an entire career

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development program for Tech Prep. A career development program requires the involvement of the entire staff, not just the counselors.

POSTSECONDARY EDUCATION ROLES

PRESIDENT/VICE PRESIDENT

The president or vice president (depending on the size of the school) should provide visibility for the program at the postsecondary level. This should include working with the board of trustees and the community. Involvement at this level is often perceived as a sign of the total commitment of an institution.

DEAN OF INSTRUCTION

The dean of instruction (again, depending on the size of the school) should serve on the steering committee (Chapter 3) and provide direction to the program. This person might serve as the force behind the changes at the postsecondary level. There are many policy and procedural decisions to be made regarding, for example, the granting of college credit. It is most helpful if this person is a champion for Tech Prep at the postsecondary level.

TEACHERS

Postsecondary teachers might serve on articulation teams or curriculum integration teams (Chapter 5). It is helpful if these teachers reach out to the secondary school teachers to build a bridge across the institutions.

Essential Roles Checklist

1. Does the consortium have a director/coordinator?
2. Is the director/coordinator acting as an organizer of the consortium activities?
3. Is there someone in a district-level position creating visibility for Tech Prep?
4. Is there administrative leadership for Tech Prep in ***each*** high school?
5. Is there someone at the postsecondary level (other than the Tech Prep director) creating visibility for Tech Prep?
6. Is there someone (other than the Tech Prep director) handling the policy/procedural issues at the postsecondary level?

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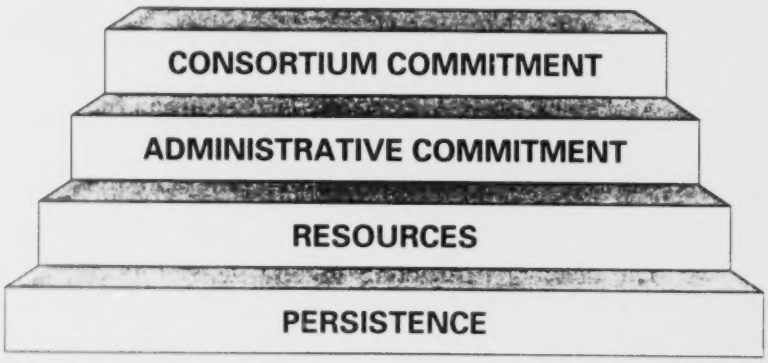
What Does It Take to Make Tech Prep Work?



CONSORTIUM* COMMITMENT

All consortium members must be actively committed to building a Tech Prep program. ***Commitment is important to making the Tech Prep program work.***

ADMINISTRATIVE COMMITMENT

The commitment to a Tech Prep program at the administrative level is vital to building an effective program. Faculty and staff members will not be able to make the changes required by the program if administrators and board members are not solidly behind the changes.

RESOURCES

Several types of resources will be needed to implement a Tech Prep program. These resources include: planning time, funding to support equipment needs, inservice programs, and time for faculty to work on curriculum.

PERSISTENCE

The Tech Prep program will not appear overnight; in fact, if it does, you should be suspicious. Typically, faculty members and counselors must first believe that change is needed. Changes made to implement a Tech Prep program are complex and cannot be carried out all at once. Identify the steps to be accomplished and focus on a few steps at a time. Once the first few steps have been accomplished, you can carve out the next task.

* See Chapter 3 for discussion of a Tech Prep consortium.

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Introduction to Tech Prep

CHAPTER 1

The Need for a Tech Prep Program

CHAPTER 2

Understanding the Tech Prep Program

The Planning Phase

CHAPTER 3

The Tech Prep Consortium

CHAPTER 4

Defining the Tech Prep Program

CHAPTER 5

Organizing the Tech Prep Program

The Development Phase

CHAPTER 6

Inservice

CHAPTER 7

Curriculum Changes

CHAPTER 8

Involving Business and Industry

The Implementation Phase

CHAPTER 9

Promoting the Tech Prep Program

CHAPTER 10

Evaluating the Tech Prep Program

CHAPTER THREE

The Tech Prep Consortium

What Is a Tech Prep Consortium?

What Are the Functions of a Tech Prep Consortium?

How Do We Form a Tech Prep Consortium?

What Is a Tech Prep Consortium?

In general, a consortium is a group of individuals joined together in partnership to accomplish a specific task. A Tech Prep consortium is a group of schools brought together to develop and implement a Tech Prep program.

One of the goals of Tech Prep is to increase linkages between high school and postsecondary schools (technical schools and colleges). A Tech Prep consortium should contain at least one secondary and one postsecondary school. Most Tech Prep programs also seek to involve businesses at an integral level. If this is part of the goal for your Tech Prep program, you may want to consider making some area business representatives members of your consortium.

Why is a consortium important in Tech Prep?

As Tech Prep involves both secondary and postsecondary education, it is impossible to develop a Tech Prep program without a consortium. The more schools you involve in the consortium, the greater the potential for interaction among teachers, staff members, and administrators.

What Are the Functions of a Tech Prep Consortium?

A consortium may perform many different functions for its members. Specific functions can and should be defined locally to fit the needs of each consortium. Functions that are typically performed by the Tech Prep consortium include a) providing linkages among consortium members, b) providing inservice to consortium members, c) identifying the careers that are expanding, d) structuring the career clusters for the consortium, and e) assisting schools in producing promotional messages

Your consortium can certainly perform additional functions for members, depending on your local needs. We recommend, however, that you clearly identify the functions your consortium will perform. This prevents any misunderstandings about the role of the consortium staff.

The following section describes the functions of a consortium.

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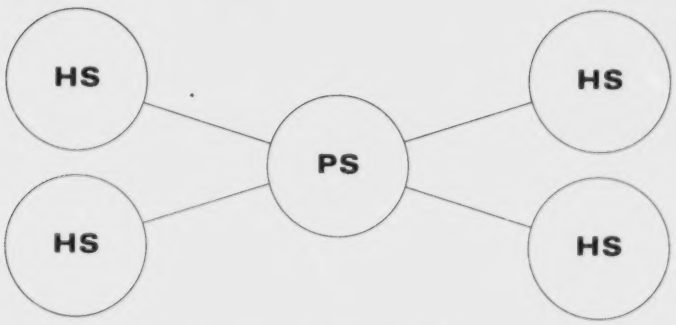
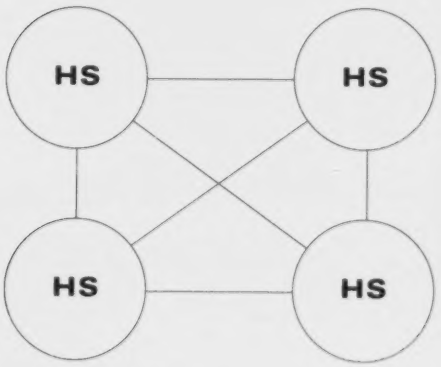
PROVIDE LINKAGES AMONG CONSORTIUM MEMBERS



PS = postsecondary (college, technical school)
HS = high school/secondary

There are two important consortium linkages. ***The first linkage is between each of the high schools and the postsecondary institution.*** Each high school will need to have a working relationship with the postsecondary institution in order to build a smooth transition from high school to college.



HS = high school

The second link should be among the different high schools in the consortium. One of the greatest advantages of working in a consortium is the opportunity to collaborate with teachers, counselors, and administrators from other schools. Having the opportunity to see what other teachers are doing with similar classes can be valuable in making changes in our own classes. Educators at all levels are very isolated from each other. The consortium offers an opportunity to interact and exchange ideas in a nonthreatening environment.

PROVIDE INSERVICE TO CONSORTIUM MEMBERS

The consortium staff should provide some of the inservice that will be needed to get the program started. Typically, the introductory programs on Tech Prep include topics such as What is Tech Prep? Why is Tech Prep needed? What are the components of a Tech Prep program? All these topics should be within the consortium director's knowledge base and ability. Additional inservice opportunities can be arranged by hiring consultants to provide inservice in needed topic areas.

IDENTIFY TOMORROW'S CAREER OPPORTUNITIES

It is important for the members of the consortium to understand what is happening in today's employment marketplace, and they should have access to current labor market information. The U.S.

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The more your consortium and community members know about the changing labor market, the more effective the program will be.

Department of Labor publishes occupational projections as well as the journal *Occupational Outlook Quarterly.* The consortium should disseminate such information to teachers, counselors, parents, students, and business and community members. The more your consortium and community members know about the changing labor market, the more effective the program will be.

STRUCTURE THE CAREER CLUSTERS

The consortium may also determine which career clusters become a part of the program. A career cluster is a group of related careers or occupations for which training is available at the postsecondary level. Examples of career clusters include: engineering technology, health services, agricultural technology, and business and information technology.

ENGINEERING TECHNOLOGY CLUSTER
Drafting Technology
Electronics Technology
Civil Engineering Technology

HEALTH SERVICES CLUSTER
Radiologic Technology
Dental Hygiene
Emergency Medical Science
Nursing

ASSIST SCHOOLS IN PRODUCING PROMOTIONAL MESSAGES

Local schools may not have the resources to produce promotional materials for the program. A consortium can create a few promotional pieces that all schools can use and some pieces customized for local schools. For example, a videotape, radio spots, and media events are all activities the consortium might consider producing for all its schools. Individual schools might produce their own press releases and articles for local papers. The marketing and public relations departments of local industries can be a valuable source of expertise for schools as they prepare promotional materials.

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How Do We Form a Tech Prep Consortium?

Almost any group of schools can form a consortium. The minimum requirements for a Tech Prep consortium are one secondary and one postsecondary school. Here are a few simple guidelines for setting up a consortium. As you work through these steps, remember that your consortium should fit local needs.

Steps in Forming a Consortium

1. Bring consortium members together.
2. Discuss funding issues.
3. Identify conditions for consortium membership.
4. Identify consortium functions.
5. Organize a steering committee.
6. Develop a written agreement.

BRING CONSORTIUM MEMBERS TOGETHER

You can begin by generating a list of potential consortium members.

Here are some factors to consider in identifying potential consortium members:

PHYSICAL PROXIMITY

There are different types of Tech Prep consortia across the country. There is no steadfast rule about the proper distance between consortium members. ***Be sure that you think about the issue of transportation among consortium members.*** Teachers and students will need access to all the schools within the consortium, so remember to consider your options for transportation. You may also consider distance-learning equipment as a means to combat large distances between schools.

SIZE OF SCHOOLS

A Tech Prep program can be put into any size school district, but the larger the school district, the more elaborate the internal organizational plan will need to be for that district. ***If you are working with many multi–high-school districts, the consortium may need additional resources to assist the schools.***

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SIZE OF OVERALL CONSORTIUM

We have spoken to many Tech Prep coordinators and directors across the country. Many of these people are overburdened with very large consortia and a relatively small staff. In most cases, the Tech Prep staff is only one person. ***In setting up your consortium, try to match the size of the Tech Prep staff with the size of the consortium.*** Keep in mind that your consortium can always be expanded once the foundation has been established.

Invite key leaders from each potential consortium member to discuss interest in developing a Tech Prep program.

Typically, the superintendent is the secondary representative who participates at this first meeting. The president or vice president for academic affairs is often the postsecondary representative.

The goals of the first meeting are as follows:

1. To create a basic understanding of
   a) what a Tech Prep program is
   b) what a Tech Prep consortium is
   c) how the consortium can function
2. To assess interest in developing a Tech Prep program

By the conclusion of the first meeting, it should be clear which parties are interested in participating in the development of the program. A sample agenda for this first meeting is provided below.

Meeting #1 Agenda

1. Introductions.
2. Preview agenda.
3. Overview of Tech Prep.
4. Definition and discussion of consortium.
5. Assess interest in forming consortium.

- *Send out an agenda for the meeting*
- *Be sure to include date, time, and place*
- *Prepare minutes from the meeting and circulate them as soon as possible.*

Once you know who is interested in participating in the Tech Prep consortium, you should conduct a second meeting in which you work through the task of creating the consortium. You may use the agenda below and the discussion in the following pages to help you through this process.

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Meeting #2 Agenda

1. Discuss funding issues.
2. Identify conditions for consortium membership.
3. Identify the functions the consortium will serve.
4. Form steering committee.
5. Develop a formal statement of agreement.

DISCUSS FUNDING ISSUES

The first issue consortium members might want to discuss is how the consortium will be funded.

There are several sources of funding available for Tech Prep associate degree programs. Some of these sources are identified below.

STATE FUNDING

Several states have appropriated funds to support the development of Tech Prep programs. We recommend that you contact your state education agency for additional information on this source of funding.

FEDERAL FUNDING

Carl Perkins Vocational and Applied Technology Education Act: The major source of federal funding for Tech Prep has come from the Carl Perkins Vocational and Applied Technology Education Act of 1990. This legislation contains two sources of support for Tech Prep.

The first source is from Title III: This money is reserved specifically for the development of Tech Prep programs. The allocation procedure is determined by each state so you will want to contact your state education agency for details. The second source of funds within the Perkins Act falls under Title II. Specifically, this funding source is called Program Improvement. Program Improvement funds are allocated to local schools (secondary and postsecondary) by formula and can be used to support Tech Prep programs. Contact your state education agency for more information about eligibility.

Goals 2000: Educate America Act: Another possible source of funding for the activities within a Tech Prep program comes from the Goals 2000: Educate America Act. Recently signed by President Clinton, the law provides funding for secondary schools that write a local improvement plan. It is possible to include the kinds of activities required for the implementation of a Tech Prep program within a local improvement plan. If you are interested in using these funds, you should contact your state education agency.

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School to Work Opportunities Act: A third avenue of federal support comes from the School to Work Opportunities Act. This legislation promotes systemic change by supporting three specific activities: work-based learning, school-based learning, and connecting activities. Although there are a few grants available directly from the federal level, most schools will have access to the funding through their state education agency. Each state must apply to the federal level for funding under the School to Work Opportunities Act. Part of this application must be a plan for implementation on a statewide level. If you are interested in using these funds to support Tech Prep, contact your state education agency.

LOCAL FUNDING

One should never overlook the obvious. Schools already allocate funds for curriculum development and inservice. If Tech Prep is a district priority, local money can be reallocated within the district. For example, design an inservice program for teachers by using Tech Prep as the theme and conduct sessions such as What Is Tech Prep?, The Changing Labor Market, Integrating Education, and The Change Process.

In addition to determining funding sources, it is important to agree on the activities to be implemented.

The following is a list of activities that are typically found within a Tech Prep program budget:

PERSONNEL
Professional Staff: Tech Prep Coordinator/Director
Support Staff: Secretary

INSERVICE
Travel
Consultants
Workshop Fees

CURRICULUM DEVELOPMENT
Curriculum Materials
Substitute Pay/Stipends

INSTRUCTIONAL EQUIPMENT
Lab Materials

PROMOTIONAL ITEMS
(Videos, Brochures, Newsletters, etc.)

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SOMETHING TO CONSIDER

How much money does it take to implement Tech Prep?

We are confident that there is no one set amount of money required to implement Tech Prep. We suspect it takes as much money as is available in the budget! ***The minimum expenditure we recommend is the hiring of a person (director or coordinator) to focus his or her efforts on the project.*** When the project is assigned to someone who already has a full-time job, it often gets lost in the shuffle.

Some equipment may be needed to implement applied teaching strategies in the classroom, but *we see no need for high dollar purchases, especially early on in the program.* The kinds of manipulatives needed for applied teaching strategies can often be purchased from local department stores. We are always encouraged by teachers who find innovative ways to teach in an applied fashion for very little money. ***If a school decides to implement a high dollar program, this decision should be made carefully and over a reasonable amount of time. Purchasing prepackaged curricula and equipment should be done with care.***

IDENTIFY CONDITIONS FOR CONSORTIUM MEMBERSHIP

Identifying conditions for consortium membership is a process of creating minimum expectations.

Consortia can be built as tight or relaxed organizations. It is important that you design the consortium to be most effective for your local situation. It is helpful to lay out expectations of each consortium member before entering into the project. This way members know the tasks that must be accomplished. Some of the issues to be addressed are identified below.

LENGTH OF MINIMUM COMMITMENT

Typically, significant change takes at least five years to occur. Consider asking members to agree to a minimum of three years in the original agreement.

MINIMUM ACTIVITIES

You may want to establish minimum activities for members. For example, members should develop at least one career cluster, participate in consortium-wide inservice programs, provide district representation to consortium work teams, etc.

LOCAL FUNDING COMMITMENT

Will each member be required to make some sort of financial commitment to the project? This may take the form of funds for equipment, or it may be in curriculum development, inservice time, substitute days, or overload hours.

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IDENTIFY CONSORTIUM FUNCTIONS

Identify the functions the consortium will serve for its members.

Identifying the consortium functions will help members understand the role each plays in the development of the program. The functions discussed on pages 28–30 are listed below. Use this list to select the functions your consortium will provide.

1. Provide linkages among consortium members.
2. Provide inservice to consortium members.
3. Identify tomorrow's career opportunities.
4. Structure the career clusters.
5. Assist schools in producing promotional messages.

ORGANIZE A STEERING COMMITTEE

Each consortium member should designate at least one person to serve on the steering committee.

The project will require one main steering committee. The purpose of this committee is to provide the vision/mission for Tech Prep and to organize the work involved in creating the Tech Prep program.

Hull and Parnell (1991) suggest creating two different committees for this function.[6] The leadership and implementation committees (described below) could be combined into one group that makes the final decisions and serves as the "workhorse" for the project. ***It is not important how many committees you create for the steering of the project, as long as the tasks get accomplished.***

LEADERSHIP COMMITTEE

The primary purpose of the leadership committee is to commit the institutions in the consortium to a Tech Prep program and make that commitment visible. The committee has overall responsibility for the program and makes final decisions.

IMPLEMENTATION COMMITTEE

The implementation committee has been referred to as the workhorse of all the committees. It is responsible for making the major decisions that go into formal agreements and for establishing the other committees that report back to it.

The following people might serve on the steering committee(s):

Director of Secondary Education
Technical Managers
Principal or Vice Principal
Human Relations Directors

[6]Hull, Dan, and Dale Parnell. *Tech Prep Associate Degree: A Win/Win Experience.* (Waco, Texas: CORD Communications, 1991), 97–98.

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Associate Superintendent
Program Directors
Department Chairpersons
Deans/Assistant Deans

The steering committee might serve the following specific functions:

- Create and appoint any additional committees/teams to work on the Tech Prep project.
- Address and finalize consortium-wide issues as they arise in the following areas:
  1. Curriculum Development
  2. Promotion/Information
  3. Evaluation/Assessment
  4. Business and Industry Involvement
- Be responsible for Tech Prep within their school/organization.

The steering committee's role is to finalize decisions. It is not responsible for all the work involved in creating a Tech Prep program.

The steering committee does not need to have specific knowledge within all four areas identified above. The committee must call on specific people to meet and make recommendations in each of the above areas. The steering committee's role is to finalize decisions rather than do all the work involved in investigating the problem and seeking solutions. ***In Tech Prep, value lies in pulling together expertise from outside the steering committee and consortium staff.***

DEVELOP A WRITTEN AGREEMENT

Developing a written agreement is a way for the consortium members to solidify the consortium as an organization.

An agreement . . .

- Can be formal and detailed or informal and general
- Should be signed by all consortium members
- Can be used to promote the project
- Can promote the commitment of consortium members

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The following is an example of an agreement presented by Hull and Parnell (1991). Unlike the one used in our own consortium, this one is relatively informal and general.

Executive Articulation Agreement

The institutions listed below are committed to developing and implementing a 2 + 2 secondary/postsecondary Tech Prep program in _____ technology. The curriculum to be installed will allow a high school student to enroll in classes at the high school that qualify for postsecondary credit after the student has graduated. The program is to begin by _____.

_____ _____
CEO, Secondary School

_____
CEO, Postsecondary Institution

_____
CEO, Secondary School

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The following is an example of a written agreement used in our own consortium:

Agreement of Participation for the Tech Prep Associate Degree Consortium of Johnson/Douglas Counties

We, the undersigned, agree to participate in the Tech Prep Associate Degree Consortium of Johnson/Douglas Counties from July _____ to July _____.

The objectives listed below are the minimum activities for a member of the consortium.

1. Send representation to consortium-wide committees.

   Each participating member agrees to establish promotional materials and evaluation strategies, provide input from business/industry, develop curriculum, and perform other related activities. Tech Prep funds shall be used to provide substitutes and stipends for staff.

2. Appoint and support the efforts of a local Tech Prep action team.

   Each participating member agrees to establish and support a local action team in the design of a sequence of courses that fulfills the core proficiencies and one of the Tech Prep clusters.

3. Promote the concept of Tech Prep within the school and community.

   Each participating member agrees to promote the idea of Tech Prep as a viable option for students.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

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CONSORTIUM WORKSHEET

Use this worksheet to form your consortium.

1. List Tech Prep consortium members.

2. Identify any conditions for consortium membership.

3. Identify the funding source(s) for the consortium and the activities to be implemented.

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CONSORTIUM WORKSHEET (continued)

4. Identify the functions the consortium will serve.

5. Identify items to be included in the formal agreement.

6. List the members of the Tech Prep consortium steering committee.

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CHAPTER FOUR

Defining the Tech Prep Program

Create Vision and Mission Statements

Set Parameters for the Program

Once the consortium has been formed and the steering committee is in place, the Tech Prep program must be defined. The consortium members must come to consensus regarding the purpose of the program and the specific parameters to be used.

The responsibility of the steering committee, defining the Tech Prep program, can be accomplished by following the steps described below.

Create Vision and Mission Statements

The first task of the steering committee is to establish a vision and mission for the project. The following are suggestions for creating the vision and mission:

- Devote at least one full meeting to developing the vision/mission.
- Have an outside facilitator run the vision/mission meeting.
- If a member of the consortium runs the meeting, this person should act as a facilitator and not a participant.

WHAT IS A VISION STATEMENT?

A vision statement is a representation of how the program is viewed. The vision statement should be a lofty statement that reaches into the future. It will be used to guide the sights of consortium members. Many organizational consultants are available to assist your consortium with writing the vision. The consortium should not hesitate to revisit the vision statement and rewrite it now and then. The vision must always be current. (See sample vision statement on the following page.)

WHAT IS A MISSION STATEMENT?

The mission statement describes how the vision will be accomplished. The mission statement should indicate the activities that will take place in order to realize the vision. Unlike the vision, mission statements are not lofty but very practical. The mission should serve as the overall goal for your Tech Prep program. (See sample mission statement on the following page.)

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Below is an example of a mission and vision statement used by the Tech Prep Associate Degree Consortium of Johnson/Douglas Counties

Tech Prep Associate Degree Consortium of Johnson/Douglas Counties

MISSION STATEMENT

To develop and offer ***programs of study*** in expanding career fields using ***innovative teaching methods*** that engage and empower students by bringing the workplace and the classroom together.

Programs of study—sequences of courses and learning opportunities offered in high school and college.

Innovative teaching methods—new, nontraditional, and creative teaching procedures that apply learning, integrate subjects and disciplines, and tap a variety of learning styles.

VISION STATEMENT

To implement a nationally recognized Tech Prep program that joins business and education to prepare all students for a rapidly changing workforce through enhancing technical communication and collaborative skills.

Set Parameters for the Program

Setting parameters includes the identification of a tech prep model and the careers to be developed.

Several Tech Prep models are available for consideration. Each model lays out a slightly different grade-level structure. Below are some examples of Tech Prep models.

TECH PREP MODELS

2 + 2 TECH PREP PROGRAM

A 2 + 2 Tech Prep program includes the last two years of high school (grades 11 and 12) and the first two years of postsecondary

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school (grades 13 and 14). This model enables students to earn an associate degree or certificate and lays out a sequence of courses for these four years.

4 + 2 TECH PREP PROGRAM

A 4 + 2 Tech Prep program begins in the ninth grade of high school and extends through the first two years of postsecondary school. This program also enables students to earn an associate degree or certificate. The course sequence for this program covers six years.

2 + 2 + 2 TECH PREP PROGRAM

A 2 + 2 + 2 Tech Prep program typically begins in the junior year of high school and includes two years of postsecondary school, which provides an associate degree, plus an additional two years at a four-year college to complete a bachelor's degree. This program lays out a six-year sequence of courses culminating with a bachelor's degree.

Caution!

Caution is advised in determining the number of years required to complete an associate degree program. Many associate degree programs cannot be completed in two years.

4 + 2 + 2 TECH PREP PROGRAM

A 4 + 2 + 2 Tech Prep program begins in the ninth grade and takes students through the associate degree or certificate and the bachelor's degree. This program lays out an eight-year sequence of courses.

HOW TO CHOOSE A MODEL FOR THE PROGRAM

Choosing a Tech Prep model that fits your consortium needs is a key element in the planning process. There are a few things you may want to consider in making this program definition decision, including:

- Size of schools in the consortium
- Resources available to the consortium

SIZE OF SCHOOLS

We recommend that you look at the number of high schools within each school district and the size of each high school.

Clearly, a one-high-school district with a total enrollment of 500 may take less staff time to inservice and develop curriculum than a five-high-school district with a total enrollment of 15,000 students.

We also recommend looking at the size of the postsecondary institution.

To do this you might look at the total number of programs you will be working with. Clearly, the more programs there are for Tech Prep students to feed into, the more resources it will take to set up the program.

Caution!

Be careful when building a Tech Prep program into the bachelor's degree level. Most associate degrees in technical fields do not provide a smooth transition into the bachelor's degree programs.

We suggest you discuss specific degree programs with representatives from four-year colleges and universities before including this feature as part of your Tech Prep program.

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AVAILABLE RESOURCES

The following are two important questions to consider regarding available resources. Thinking about these questions up front will make for smoother sailing later on.

- Can the consortium afford to provide inservice for the number of people who will need it?
- Are there appropriate facilities available for functions such as inservice?

IDENTIFYING CAREERS TO BE DEVELOPED

What careers or career clusters should be developed?

The consortium should define which careers or groups of careers the program will include. This decision should depend on the resources of the postsecondary school as well as the employment market.

Each local school district must also determine which of the careers or career clusters can be developed within their high school. Schools vary widely in their ability to provide technical courses. Some high schools offer technical courses, while others rely on career centers or technical schools. Schools that are unable to provide the appropriate technical courses should consider alternative delivery methods. Alternatives might include having students attend the postsecondary school or take a technical class offered in a different school district.

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TECH PREP DEFINITION WORKSHEET

1. Create a vision statement for the Tech Prep program.

2. Create a mission statement for the Tech Prep program.

3. What grade levels will your Tech Prep program include?

4. What careers or career clusters will the program use?

CHAPTER FIVE

Organizing the Tech Prep Program

Organizing the Consortium

Organizing the Local School District

Organizing the Postsecondary School

Organization and planning are crucial to a successful Tech Prep program. This chapter explains how you might organize the people involved in the program.

On the following pages we recommend creating work teams that focus their attention on issues common to all consortium members. It is also helpful for the school districts to create two kinds of teams. One of these teams (the action team) is responsible for district-level decisions and activities, the other (the building team) for building-level decisions and activities. We also recommend creating teams at the postsecondary school to handle articulation and curriculum changes.

A Word about Teams

Effective teams are composed of five to seven people. Teams larger than this tend to subdivide.

If you must work with a large team, divide the team into smaller work groups.

Teams need time to get to know each other—this will make them more effective.

Have you ever heard the response "Oh no!" from a prospective work team member?

People respond better to work teams in which . . .

- They know exactly what will be expected of them
- They know how long the work team will be meeting
- They know what the goals of the group are.

Organizing the Consortium

Work teams should be established by the steering committee to facilitate the many activities required to develop and implement a Tech Prep program. Work teams are responsible for handling issues that relate to all consortium members.

WHAT WORK TEAMS SHOULD BE CREATED?

There are several main tasks involved in the development and implementation of a Tech Prep program. Some common work teams are curriculum, evaluation, promotion, and business and industry. The function of each of these work teams must be defined by the steering committee.

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CREATING THE WORK TEAMS

The steering committee is responsible for appointing the work teams. In addition to establishing the membership, the steering committee should also define the specific responsibilities of each consortium work team. This will help the team focus its efforts and help assure that it accomplishes what needs to be done. Use the Work Team Worksheet provided at the end of this section to help set up the teams.

The following pages discuss each work team identified above.

We have included a sample letter of invitation to serve on a curriculum work team and a sample agenda for the first meeting. Please consult pages 55–56.

Caution!

Work Team Rules

1. Work team efforts are focused on issues that effect all members of the consortium. The teams cannot make decisions for individual schools.
2. All consortium members should be represented on each of the work teams (unless this creates a very large team).
3. A chairperson (other than the Tech Prep coordinator) should be appointed.
4. Expectations for work team members should be laid out clearly in advance.

THE CURRICULUM WORK TEAM

THE ROLE OF THE TEAM

The curriculum work team deals with curriculum policies for the consortium. From our perspective, the curriculum team

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responds to the following kinds of questions:

- What are the core proficiencies for Tech Prep?
- What are the characteristics of Tech Prep curriculum?
- What inservice must be provided for teachers to shift their teaching strategies?

The team should have the option of creating ad hoc groups to solve specific problems or make recommendations. For example, an ad hoc group might be created to define the core proficiencies for Tech Prep students or build a plan to assist teachers in integrating academic and technical curriculum.

WHO SHOULD SERVE ON THE TEAM?

The curriculum work team should include representatives from each consortium member. It is best to have district-level representation from the secondary schools and administrative-level personnel from the postsecondary schools. Placing only teachers on this work team often does not provide the clout needed to get the job done.

THE PROMOTION WORK TEAM

THE ROLE OF THE TEAM

The promotion work team publicizes the program. If your consortium is large and covers a wide variety of schools (i.e., rural, suburban, etc.), this team can handle promotion by creating a few major pieces for all consortium members to use. Individual schools can do local promotion for their own initiatives.

WHO SHOULD SERVE ON THE TEAM?

All consortium members should be represented on the promotion work team. Information directors, media contact people, and other promotion professionals employed by the schools are essential members. Members of the local media are also excellent members for this team.

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THE EVALUATION WORK TEAM

THE ROLE OF THE TEAM

The evaluation work team assesses the effectiveness of the Tech Prep program. It is important to know if the program is effective. The team must determine what data elements will be collected and analyzed as well as what kind of conclusions will be made about the Tech Prep program.

WHO SHOULD SERVE ON THE TEAM?

The evaluation team should include representives from all consortium members. You will need people who have knowledge and experience in evaluating programs. It is also important to include people from each school district who handle student data.

THE BUSINESS AND INDUSTRY INVOLVEMENT WORK TEAM

THE ROLE OF THE TEAM

The business and industry involvement work team plans specific activities to bridge the gap between skills used on the job and skills taught within the classroom. Skills such as critical thinking, teamwork, and communication are essential for employees to have and sometimes difficult for teachers to teach within the classroom. Activities such as internships, mentorships, "day on the job," and others can be effective tools in preparing the Tech Prep student for employment.

WHO SHOULD SERVE ON THE TEAM?

Ideally, this team should consist primarily of business and industry representatives. It is helpful to have a few representatives from education to discuss the school issues of transportation, insurance, and other related concerns. The driving force within this group, however, should be the business community.

When should these work teams be created?

We recommend creating the curriculum work team before any of the other teams. This team must establish the curriculum foundation before other tasks can be undertaken.

When creating a promotion work team, be sure you have a program to promote before creating a need in the minds of parents and students.

The evaluation work team can be created early in the project so that data collection procedures are ready when students begin to enroll.

The business and industry involvement work team should be created early in the project. This team can play a crucial role in the development of the program.

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Sample letter of invitation to serve on a curriculum work team:

WORK TEAM WORKSHEET

_____

Name of Work Team

1. List the work team members.

_____

_____

_____

_____

_____

_____

_____

_____

2. Identify the goals of the work team.

_____

_____

_____

_____

_____

_____

_____

_____

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Dr. Christine Stone
Curriculum Director
Unified School District 111
5647 Pearle Avenue
Overland Park, Kansas 66666

July 1, 1994

Dear Dr. Stone,

The Tech Prep Consortium of Johnson County is building a program to help students prepare for their future. We are building sequences of courses for high school students who want to pursue a two-year degree. We are creating a curriculum work team for the project and would appreciate having you as a member of this team.

The team will handle the major curriculum issues for the schools in the project. The team will be establishing core competencies for students and identifying the curriculum changes to be made within courses. The team will also be designing and implementing an inservice plan to help teachers make the appropriate changes. The team will meet approximately once a month for three hours during this academic year. Specific dates will be set during the first meeting.

The first meeting of the curriculum work team will be on August 23, 1994, at Johnson County Community College. The meeting will begin at 9:00 A.M. in the Cultural Education Center, room 324. Please bring your calendar so we can set subsequent meeting dates. We have enclosed an agenda and a map for your convenience.

If you will be unable to join us on this work team or are unable to make the meeting on August 23, please let us know by contacting the Tech Prep project office at 469-8500, ext. 4143. Thank you for your time and attention.

Warmest regards,

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Sample agenda for a curriculum work team meeting:

Tech Prep Curriculum
Work Team Agenda

August 23, 1994
Johnson County Community College
CEC room 324

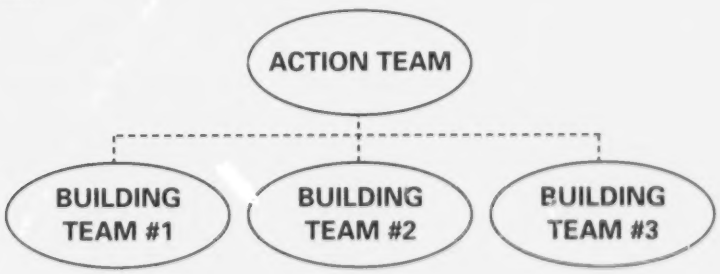
9:00 A.M. Call to order

1. Introduction of members
2. Background on Tech Prep
3. Orientation to the Tech Prep Consortium
4. Goals of the curriculum work team
5. Set meeting schedule for the year
6. Adjournment

Organizing the Local School District

We have found it helpful to have two kinds of Tech Prep teams at the secondary level for implementing the program: an action team and building teams. The local school district is responsible for creating the action and building teams.

Below is a diagram of how a school district with three high schools might be organized for Tech Prep using action and building teams.



The following section discusses each of these teams in detail.

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THE ACTION TEAM

Tech Prep requires a schoolwide shift from a curriculum pattern that focuses almost exclusively on college preparatory and general education programs to one that focuses on preparing all students for the world of work. For this reason, it is crucial to have all levels of the school system involved.

The first team we recommend creating is an action team. ***The action team provides leadership and guides the overall development of the program within the local school district.*** The district representative to the steering committee should work with the principals to create the action team. Typically, either the steering committee member or other district administrator serves as chairperson of the action team.

The action team should represent all the high schools in the district as well as district-level administrators. High school representatives might include principals, lead teachers, department heads, and counselors. District-level representatives might include the superintendent, assistant superintendent, curriculum director, or director of secondary education. A business representative and a board of education member are also excellent additions to this group.

The following is a typical list of responsibilities for a tech prep action team:

1. Set district timetable and plan for implementation.
2. Plan inservice activities for faculty and staff.
3. Project budget needs.
4. Promote the Tech Prep program within the community and the school system.
5. Develop/oversee course sequencing and other curriculum changes as necessary.
6. Prepare and present recommendations to the board of education.
7. Build agreements with postsecondary schools.
8. Monitor the effectiveness of the Tech Prep program.
9. Involve business and industry representatives in the program.
10. Identify the career clusters to be developed by the district.

Use the worksheet (page 58) and the sample memorandum of invitation (page 59) to help create the action team.

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ACTION TEAM WORKSHEET

Identify the people who will serve on the action team.

Name	Position	Building	Phone #

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Sample letter of invitation to serve on a Tech Prep action team:

MEMORANDUM

TO: Mr. Louis
FROM: Dr. Grant
DATE: August 12, 1994
SUBJECT: Tech Prep Action Team

As you know, our district is involved in the Tech Prep Consortium of Johnson County. We are creating a Tech Prep Action Team for our district and would like to have you as a member of this team. The team will handle district-level decisions about Tech Prep in Olathe.

We will need to meet monthly for the first year. The first meeting has been scheduled for September 16, 1994, at 1:30 P.M. in the conference room at the education center. Please let me know if you will be able to join us on the Tech Prep Action Team.

The agenda for the first meeting is listed below:

1:30 P.M. Call to order

1. Introduction of members
2. Review of Tech Prep Consortium
3. Goals of the Tech Prep Action Team
4. Set meeting schedule for the year
5. Background on Tech Prep Adjournment

THE BUILDING TEAM

The second team we recommend creating is a building team within each high school. ***Tech Prep building teams are responsible for handling implementation issues at the building level.*** The team should be appointed by the steering committee representative and the principals. This team is best chaired by the principal or another administrator at the building level.

The building team should consist of the principal, at least one counselor, and at least four teachers from various content areas (academic and technical). A business representative and a board of education member are also excellent additions to this team. The action team and the building teams should also have some members in common to promote a smooth flow of communication among the teams.

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The building team will include only a small portion of the high school staff. It is important, however, that all staff members at least understand Tech Prep. Ideally, as many staff members as possible should be involved. The more involvement there is at the building level, the more effective the program will be.

The following is a typical list of responsibilities for a building team:

1. Assist in developing the curriculum sequence.
2. Promote the program within the high school.
3. Identify and enroll Tech Prep students.
4. Meet with postsecondary representatives to articulate curriculum.
5. Design and produce recruitment materials for students.
6. Make curriculum changes and work with other faculty and staff to implement curriculum changes.

Additional responsibilities should be identified in response to local needs.

Sample letter of invitation to serve on a Tech Prep Building Team:

MEMORANDUM

TO: Ms. Steward
FROM: Dr. Bryant
DATE: September 5, 1994
SUBJECT: Tech Prep Building Team

As you know, our district is involved in the Tech Prep Consortium of Johnson County. We are creating a Tech Prep Building Team for our high school and would like to have you as a member of this team. The team will focus on how Tech Prep will be implemented in our building.

The first meeting has been scheduled for October 4, 1994, at 10:00 A.M. in the library media room. Please let me know if you will be unable to join us for this meeting.

The agenda for the first meeting is listed below:

10:00 A.M. Call to order

1. Review of Tech Prep Consortium
2. Goals of the Tech Prep Building Team
3. Prioritize goals and assign subteams

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BUILDING TEAM WORKSHEET

Identify the people who will serve on the building teams.

_____
Building Name

Name	Position	Phone #

_____
Building Name

Name	Position	Phone #

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Organizing the Postsecondary School

We recommend creating two kinds of teams at the postsecondary level. The first kind of team focuses attention on articulation agreements, the second on bridge curriculum.

ARTICULATION TEAMS

The articulation teams at the postsecondary school are responsible for building a nonduplicative course of study within the career programs. Each career program will need an articulation team. The responsibilities of the articulation team are as follows:

1. Compile current competency lists for coursework offered in the career program.
2. Share competencies with secondary teachers who teach related courses.
3. Create a course sequence within the program from secondary to postsecondary school that eliminates duplication of coursework.
4. Develop a signed agreement that identifies the nonduplicative sequence of courses and recommended electives.

Each articulation team should be composed of a program director and several faculty members. We recommend that a team chairperson be appointed to oversee and coordinate the activities of the team. The process of creating an articulation agreement will probably take at least two meetings. Consult page 64 for a sample Articulation Team Worksheet.

BRIDGE CURRICULUM TEAMS

The bridge curriculum is an important element in the postsecondary school program. It is designed to bring adult students up to the same level of preparation as high school Tech Prep students. If the postsecondary school is going to raise entrance requirements based on the skills of Tech Prep students, it must provide a way for adults to meet those same requirements.

The bridge curriculum team (sometimes called transformations) is responsible for designing, writing, and implementing the

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curriculum that adult students will take at the postsecondary level. The curriculum is designed to prepare students for entry into the career program, not to provide advanced-standing credit within a program. The curriculum has four components: communication, science, mathematics, and technical literacy. These components should be taught using the same applied and integrated teaching strategies used in the high school Tech Prep program. Nontraditional scheduling is often used to appeal to the student who cannot take a traditional semester of courses to get up to speed to enter a career program.

Goals of the Bridge Curriculum Team

1. Design and implement the Tech Prep bridge curriculum.
2. Offer the curriculum in nontraditional methods.

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ARTICULATION TEAM WORKSHEET

_____

Name of Career Program

List the members of the articulation team.

_____

_____

_____

_____

_____

_____

_____

_____

Identify the goals of the articulation team.

_____

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BRIDGE CURRICULUM TEAM WORKSHEET

List the members of the bridge curriculum team.

Identify the goals of the bridge curriculum team.

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Introduction to Tech Prep

CHAPTER 1

The Need for a Tech Prep Program

CHAPTER 2

Understanding the Tech Prep Program

The Planning Phase

CHAPTER 3

The Tech Prep Consortium

CHAPTER 4

Defining the Tech Prep Program

CHAPTER 5

Organizing the Tech Prep Program

The Development Phase

CHAPTER 6

Inservice

CHAPTER 7

Curriculum Changes

CHAPTER 8

Involving Business and Industry

The Implementation Phase

CHAPTER 9

Promoting the Tech Prep Program

CHAPTER 10

Evaluating the Tech Prep Program

CHAPTER SIX

Inservice

Who Needs Inservice?

Inservice Topics

Transparency Masters

Many people will be involved in the development of your Tech Prep program. We suggest that you first provide inservice for participants so that a common understanding can be created.

Who Needs Inservice?

Anyone who will play a key role in the development of the program should be trained first. Additional participants will also need inservice; however, we recommend focusing first on the members of the steering committee, the work team members, the action and building team members, and the articulation and bridge curriculum teams.

Once the key players have received an orientation to Tech Prep, you should turn your attention to such groups as faculty and staff at all consortium schools, community members, school boards, and business and industry personnel.

Inservice Topics

There are two specific subjects we feel all key players must understand before they can be effective members of the project. These are:

1. The nature of the Tech Prep program
2. The role each of them is being asked to play in that program

UNDERSTANDING THE TECH PREP PROGRAM

It is important that the work team members have a solid understanding of the program and its specific goals. ***We suggest providing inservice and/or workshops on several topics to help the members of your work teams understand the project.***

In order to provide a complete understanding of Tech Prep, we suggest including all of the following topics within the first inservice:

- What is a Tech Prep program?
- Why is a Tech Prep program needed?
- What is a Tech Prep consortium?
- What kinds of changes will a Tech Prep program require?

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UNDERSTANDING ONE'S ROLE IN THE TECH PREP PROGRAM

The key players must also understand their own role in the Tech Prep program. All work team members must understand what is expected of them. This includes knowing:

1. How often they will be meeting
2. How much time will be needed for the meetings and for work outside meetings
3. How long the team will exist
4. What the team's specific responsibilities will be.

After the key players have been inserviced, attention can be turned to additional groups. Some groups can be addressed by the consortium staff; however, it will not be possible for the consortium staff to provide all the inservice. ***Each consortium member must identify specific local audiences that should be informed about the program and make arrangements to provide the appropriate inservices.*** We make the following suggestions for local inservice:

DISTRICT-LEVEL INSERVICE

1. The board of education should receive a full explanation of the program, regular updates, and details of changes being made for Tech Prep.
2. Advisory groups working with the school system should learn about Tech Prep and the changes being made.

HIGH-SCHOOL-LEVEL INSERVICE

1. Local parent groups should be informed about Tech Prep and the changes it will bring to the school.
2. All faculty and staff should be aware of Tech Prep and the changes it will bring about.

POSTSECONDARY-LEVEL INSERVICE

1. The board of trustees must be made aware of Tech Prep and the changes it will bring to the college.
2. As many faculty and staff at the college as possible should be informed about Tech Prep and told how it will affect students coming into the college.
3. Advisory councils should be made aware and involved in Tech Prep.

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Transparency Masters

We have provided some transparency masters for your convenience. They are designed to address three main topics: 1) The Changing Workforce, 2) Education Issues, and 3) Tech Prep. We recommend that you design additional transparencies explaining the local perspective on Tech Prep.

The Changing Workforce

Our future depends upon
a highly skilled workforce.

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Technology has increased the skill levels required for workers.

Agricultural methods have moved from the plow and mule to biotechnology and the genetic alteration of foods.

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The manufacturing workforce has shifted from assembly line workers to robots and technicians to maintain them.

Information processing has changed from typewriters and keypunches to voice-to-print technologies and personal data assistants.

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Employment has shifted from manufacturing to service.

U.S. EMPLOYMENT

Year	Manufacturing	Service
1950	25%	45%
1989	17%	70%

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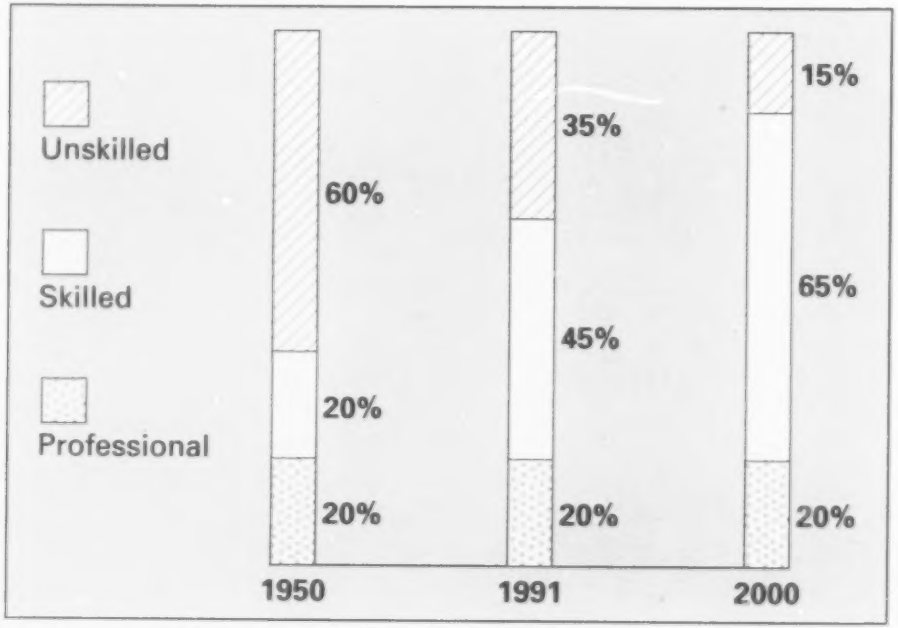
The workforce has shifted from unskilled to skilled.



U. S. Bureau of Labor Statistics

TRENDS OF THE FUTURE

90% of all jobs in the year 2000 will require knowledge of a computer.

85% of future jobs will require some college but less than a four-year degree.

60% of high school students will work in jobs that do not currently exist.

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TRENDS OF THE FUTURE

- Average adult will change jobs seven times and careers three times.
- New jobs will be predominantly in small companies (with twenty-five employees or less).
- Workforce will be older, predominantly female, and multicultural.

Education Issues

THE PROBLEM!

- Our education system was not designed to produce highly skilled workers.
- The system was designed for an economy based on unskilled labor.

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EDUCATION (K–16) MUST CHANGE

- Since 1989, one-third of the jobs requiring a bachelor's degree have disappeared.
- By 2005, only 30% of jobs will require a bachelor's degree.
- 75% of the new jobs created in the next ten years will require some college but less than a four-year degree.

- 75% of high school graduates do not receive a four-year degree,

yet

- our curriculum is designed for students bound for a four-year college.

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THE NEW BASIC SKILLS*

- Learning to Learn
- Reading, Writing, Computation
- Listening and Oral Communication
- Creative Thinking/Problem Solving

*Carnevale, Anthony P., Leila J. Gainer, and Ann S. Meltzer, *Workplace Basics: The Skills Employers Want* (Washington, D.C.: The American Society for Training and Development, U.S. Department of Labor Employment and Training Administration, 1988).

SCANS*
Three-Part Foundation

- Basic Skills
- Thinking Skills
- Personal Qualities

*Secretary's Commission on Achieving Necessary Skills

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Five SCANS* Competencies

- Resources
- Interpersonal
- Information
- Systems
- Technology

*Secretary's Commission on Achieving Necessary Skills

Tech Prep

WHAT IS TECH PREP?

A technical education program that begins in high school and culminates with an associate degree or two-year certificate.

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WHO IS TECH PREP FOR?

HIGH SCHOOL COURSES	POST-HIGH-SCHOOL GOAL
College Preparatory	Four-Year University/College
Vocational Education	Employment
General Education	?

Parnell, Dale. *The Neglected Majority* (Washington, D.C.: The Community College Press, 1985). Chart adapted from Hull, Dan, and Dale Parnell. *Tech Prep Associate Degree: A Win/Win Experience*, (Waco, Texas: CORD Communications, 1991), 41.

COMPONENTS OF TECH PREP

1 Course sequences

2 Sequences built around career clusters

3 Three proficiency levels

4 Application-based teaching strategies

5 Integration of disciplines and subjects

6 Involvement of business and industry

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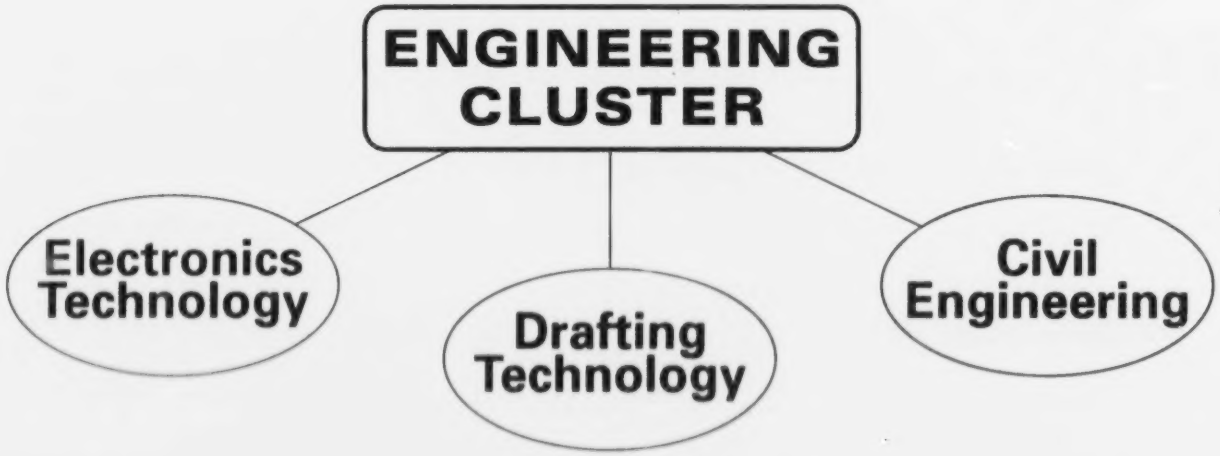
COURSE SEQUENCES

Secondary				Postsecondary	
9	10	11	12	13	14

COURSE SEQUENCES BUILT AROUND CAREER CLUSTERS



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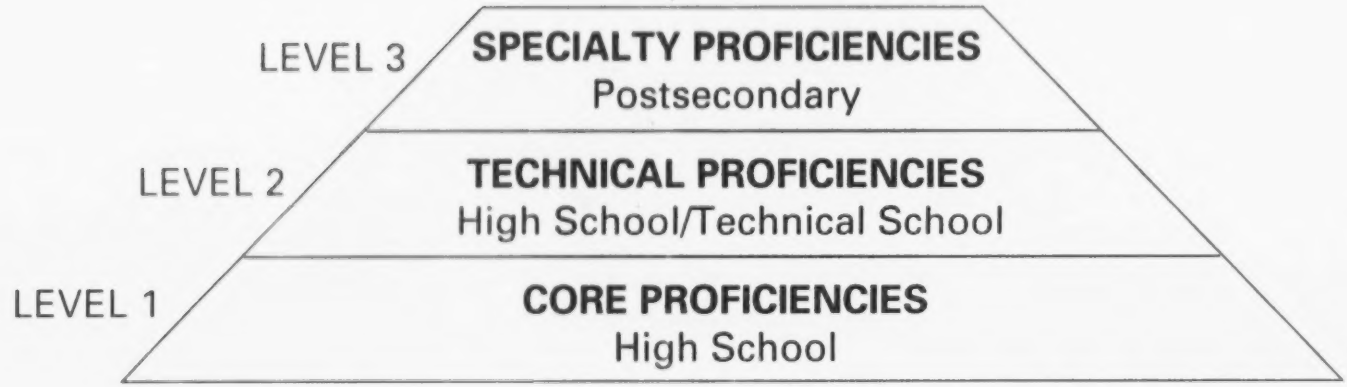
THREE LEVELS OF PROFICIENCIES



CHAPTER SEVEN

Curriculum Changes

The Sequence of Courses

Creating a Sequence of Courses

Applied/Integrated Teaching Strategies

Beginning Curriculum Changes in the School District

The Sequence of Courses

A Tech Prep program presents a sequence of courses beginning in high school and culminating with an associate degree or two-year certificate. This sequence of courses should do the following:

1. Replace the "general education" sequence of courses in high school.
2. Include courses that cover the core, technical, and specialty proficiencies.
3. Run parallel to the traditional "college-bound" sequence of courses in high school.
4. Raise expectations for student performance.
5. Be an option for all students.
6. Provide advanced skills for program graduates.

There are three levels of proficiency within a Tech Prep program. The next section discusses the three proficiency levels.

LEVEL 1: THE CORE PROFICIENCIES

WHAT ARE CORE PROFICIENCIES?

Core proficiencies are the skills in mathematics, science, communication, and technology required for all Tech Prep students.

SPECIALTY PROFICIENCIES

TECHNICAL PROFICIENCIES

CORE PROFICIENCIES
Math, Science, Communication, and Technology

IDENTIFYING THE CORE PROFICIENCIES

The curriculum work team should identify the core proficiencies for the Tech Prep program. These proficiencies help schools create a common set of basic requirements for Tech Prep students.

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WHY ARE CORE PROFICIENCIES NEEDED?

Building the curriculum is a central part of developing a Tech Prep program. The core proficiencies can lay a firm structure for the curriculum and program.

Whenever many secondary schools are feeding students into the same postsecondary school, it is essential that their entry level skills be approximately the same. Assuming the secondary school consortium members will make their own curriculum changes, it is essential that those curriculum changes be grounded in a set of core proficiencies. All schools address the core proficiencies; however, each one may do so in a different way.

The core proficiencies can be established by the curriculum work team or an ad hoc group created by the curriculum work team. Each consortium should establish the content areas that the core will touch. The content areas listed under "Core Proficiencies" in the diagram on page 104 are really the minimum. The set of core proficiencies for our consortium are contained in Appendix D.

LEVEL 2: THE TECHNICAL PROFICIENCIES

WHAT ARE TECHNICAL PROFICIENCIES?

Technical proficiencies are the introductory skills within a career cluster or program. They are also the technical skills necessary for entrance to and effective performance in the postsecondary career program.

SPECIALTY PROFICIENCIES

TECHNICAL PROFICIENCIES

CORE PROFICIENCIES
Math, Science, Communication, and Technology

LEVEL 3: SPECIALTY PROFICIENCIES

Specialty proficiencies are the skills required for successful employment within a specific occupation.

SPECIALTY PROFICIENCIES

TECHNICAL PROFICIENCIES

CORE PROFICIENCIES
Math, Science, Communication, and Technology

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If the sequence of courses that extends from the secondary to the postsecondary school is "seamless," the specialty proficiencies can be upgraded.

The third level of proficiencies addressed by a Tech Prep program is taught at the postsecondary institution.

Articulation is the process of aligning the secondary and postsecondary curriculum so that there is a sequenced, nonduplicated program of study. This may include awarding students advanced standing credit at the postsecondary school for the proficiencies they can already demonstrate. After a Tech Prep program is up and running and students are entering the postsecondary degree programs with the appropriate skills, the specialty proficiencies can be raised. This will allow students to graduate from the degree program with a higher level of skills.

Creating a Sequence of Courses

Begin with a grid that identifies the year in school and the content areas covered. This form can be used to "plug in" courses within the sequence. See page 108 for a sample blank form.

STEP 1 Identify specific courses required for high school graduation. Place these courses on the grid.

STEP 2 Identify the courses that will address the core proficiencies designed by the curriculum work team. Place these on the grid in the appropriate place.

STEP 3 Have postsecondary faculty (with advice from business and industry representatives) identify the technical proficiencies. These are typically the skills required of students entering the postsecondary degree program.

STEP 4 Have secondary and postsecondary faculty identify the courses that address the technical proficiencies. These can be taught at the high school or vocational/technical center.

STEP 5 Have secondary and postsecondary faculty sequence the courses so that students may move easily from high school into the postsecondary degree program.

STEP 6 Place these courses in the appropriate place on the grid.

STEP 7 Have postsecondary faculty (with advice from business and industry representatives) identify the specialty proficiencies required for completion of the program.

STEP 8 Place these courses in the appropriate places on the grid.

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SAMPLES FOR REVIEW. . .

Page 109 contains a sample Tech Prep sequence for an engineering and industrial technology cluster. The sequence covers only the core and technical proficiencies.

Page 110 contains a sample articulation agreement for Tech Prep. The agreement lays out the last two years of high school and two years of college (four-year map). It also identifies any overlapping curriculum for which advanced standing credit may be granted.

Page 111 contains a sample Tech Prep Advanced Standing Credit form that can be used to formalize an agreement on overlapping curriculum.

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YEAR/CONTENT AREAS WORKSHEET

	9	10	11	12	13	14
English						
Math						
Science						
Humanities/ Social Science						
Other Requirements						
Technology						
Technology						

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SAMPLE

Blue Valley Public Schools
TECH PREP SEQUENCE

ENGLISH I	ENGLISH II	ENGLISH III	CONTEMPORARY COMMUNICATION
MATH I OR ALGEBRA I	MATH II	MATH III	ALGEBRA II OR PRECALC OR ALGEBRA III
	GEOMETRY	ALGEBRA II	
BIOLOGICAL AND PHYSICAL SCIENCE REQUIREMENTS		SCIENCE AND TECHNOLOGY I	SCIENCE AND TECHNOLOGY II
PHYSICAL EDUCATION	WORLD HISTORY	AMERICAN HISTORY	AMERICAN GOVERNMENT / SOCIAL STUDIES ELECTIVE
KEYBOARDING / COMPUTER REQUIREMENT	HEALTH / ELECTIVE	TECH PREP ELECTIVES (see below)	

TECH PREP ELECTIVES*

Drafting I
Drafting II
Drafting III
Industrial Technology I
Advanced Industrial Technology
Automotive Technology (AVTS)
Career Exploration

*May provide advanced standing credit at JCCC.

ENGINEERING AND INDUSTRIAL TECHNOLOGY CLUSTER

This sequence of courses prepares students to enter the following degree programs:

Associate of Applied Science Degree

Automotive Technology
Heating, Ventilation, and Air-Conditioning Technology

Associate of Science Degree

Civil Engineering Technology
Drafting Technology
Electronics Engineering Technology

Tech Prep Associate Degree Consortium of Johnson/Douglas Counties
Articulation Agreement between
Blue Valley Public Schools and Johnson County Community College
in the Drafting Technology Program—Machine Option

GRADE 11	GRADE 12	GRADE 13	GRADE 14
English III	Contemporary Communication	Technical Drafting	Mechanical Drafting
Math III or Algebra II	Algebra II or PreCalc or Algebra III	Intro to CAD Concepts	Computer-Aided Drafting 3-D
Science and Technology I or Chemistry I	Science and Technology II or Physics	Composition I	Technical Statics and Mechanics
American History	American Government (1/2) Social Studies Elective (1/2)	Intro to Personal Computers	Technical Physics I
Drafting II*	Drafting III*	PC DOS	Social Science and/or Economics Elective
Elective	Elective	CPCA Elective	Electrical Drafting
Elective		Technical Math I	Structural Drafting
		Mfg. Materials and Processes	Industrial Design Applications
		Intermediate CAD	Technical Elective
		Technical Elective	Humanities and/or Art Elective
		Technical Writing I	Health and/or Phys. Ed. Elective
		Technical Math II	

HIGH SCHOOL TECH PREP ELECTIVES	POSTSECONDARY TECHNICAL ELECTIVES
Industrial Technology Career Exploration	Intro to Word Processing Spreadsheets on Micro I Database on Micro I Drafting Internship I Intro Electronics Machine Tool Processes Metallurgy Windows Civil Drafting CAD Applications Drafting Intern II Intro to Welding ***Any one of the following programming classes:*** Programming Algorithms BASIC for Engineering Technology Programming Fundamentals Programming for Engineering and Science
*Provides advanced standing credit at JCCC.	

Secondary Administrator Date

Postsecondary Administrator Date

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TECH PREP ADVANCED STANDING AGREEMENT

between Blue Valley Public Schools and Johnson County Community College in the Engineering and Industrial Technology Cluster Drafting Technology Program

The courses listed below have been reviewed by the program director and faculty at Johnson County Community College. These courses have been found to be equivalent in content and are acceptable for Advanced Standing Credit—Tech Prep. The awarding of advanced standing credit for Tech Prep is subject to the Tech Prep Advanced Standing Credit Policies listed below.

1. Advanced Standing Credit—Tech Prep applies to students officially enrolled in the Tech Prep Associate Degree Consortium of Johnson/Douglas Counties.
2. Credit will be applied only for courses identified on a Tech Prep Advanced Standing Agreement form.
3. Credit will be posted on the JCCC transcript as Advanced Standing Credit—Tech Prep.
4. The JCCC equivalent course will be posted on the transcript.
5. Advanced Standing Credit—Tech Prep will be given only for a final grade of C or better.
6. The grade will be posted as P.
7. Credit will be posted after 12 additional hours of JCCC credit have been successfully completed.
8. No fee will be assessed for the credit.
9. Credits may not apply toward the JCCC residency requirement.

Secondary Courses*		**Johnson County Community College Courses**	
Course Number/Name	Credit Hrs	Course Number/Name	Credit Hrs

* Course outline is attached.

Secondary Administrator Date

Postsecondary Administrator Date

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Applied/Integrated Teaching Strategies

Traditionally, we teach subjects as though they do not overlap. Applied/integrated teaching strategies allow subjects and disciplines to be blended. Students begin to understand how subjects are related and why the content is useful. The courses included in your sequence for Tech Prep students must be taught using applied/integrated teaching strategies.

Applied/Integrated Teaching Strategies

1. Shift the focus of the classroom from theory to application.
2. Use "hands-on" approaches to learning.
3. Answer the question "Why do I need this?"
4. Build connections between academic and technical learning.
5. Build connections among subject areas (i.e., biology and chemistry, physics and math, or music and math).

Tech Prep courses use less lecturing and more hands-on learning.

There are any number of ways to apply and integrate teaching. The following section presents some suggestions for using application and integration strategies. It is crucial these suggestions be used only as a starting place—you should look beyond them by developing your own strategies.

TEAM TEACHING

ACADEMIC AND TECHNICAL

This team can be a very effective approach to applying teaching strategies. The academic teacher provides content-specific knowledge, while the technical teacher provides the application for the content.

ACADEMIC AND ACADEMIC

Team teaching can bring teachers together and help them expand their own skills while creating an exciting learning environment for students.

This team is most effective when two disciplines are integrated. Science and math, for example, complement each other well in the classroom. The math teacher can explain the formulas and manipulations within the science experiment.

TECHNICAL AND TECHNICAL

The pairing of technical teachers also works well. For example, a Computer-Aided Design (CAD) system can help interior design students with room layout. Many interior design teachers, however, do

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not have the skills to run the CAD system. A drafting instructor can provide the CAD knowledge for the interior design students, and the drafting students will also learn about working with clients if they treat the interior design students as such.

APPLIED ACADEMIC CURRICULUM

Another way to teach using application and integration is to use "applied academic" curriculum. This is curriculum that has been developed through a consortium process and is available for sale.

PRINCIPLES OF TECHNOLOGY

This is an applied physics curriculum produced by the Center for Occupational Research and Development (CORD). It is designed for high school students and is usually taught in the junior and senior years.

APPLIED MATHEMATICS

This is a hands-on mathematics curriculum (produced by CORD) that teaches approximately the equivalent of algebra I and geometry. It was designed with occupational application "labs" that help students see how mathematics concepts are used in various jobs.

APPLIED BIOLOGY/CHEMISTRY

This is a hands-on curriculum designed by CORD for high school students. It combines the subjects of biology and chemistry using "real-life" application for the concepts.

APPLIED COMMUNICATION

This is a hands-on curriculum designed by the Agency for Instructional Technology (AIT). It focuses on teaching communication skills and can be taught as an independent course or used one module at a time.

WORKPLACE READINESS

This is a three-unit curriculum designed by AIT. The curriculum can be used within a classroom or a learning lab.

Caution!

We recommend using caution whenever a prepackaged curriculum is purchased. Teachers must modify the curriculum to fit the needs of their students.

APPLIED ECONOMICS

This is a high school curriculum designed by Junior Achievement. It teaches practical application of economics concepts.

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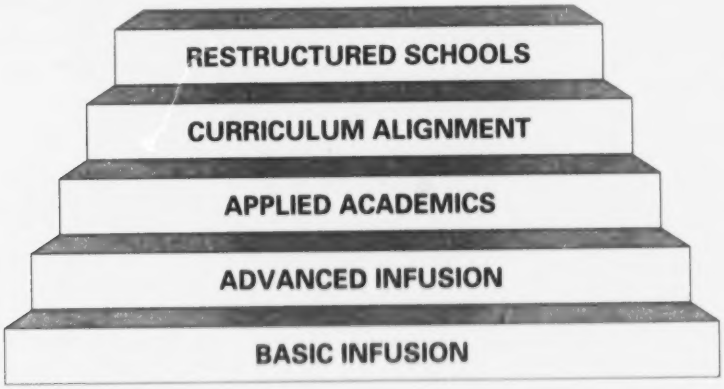
ACHIEVING INTEGRATION—A FIVE STEP HIERARCHY[7]

Schmidt (et al.) describes a five stage hierarchy of achieving integration in the National Network of Curriculum Coordination (NNCC) publication entitled *Integrating Academic and Vocational Education: A Practioner's Guide.*



Here is a description of the five levels in the hierarchy.

BASIC INFUSION

". . . attempting to improve the academic skills of students by incorporating academic content into vocational courses"

ADVANCED INFUSION

". . . vocational and academic teachers work together to integrate academic skills into vocational classes

APPLIED ACADEMICS

". . . curricula for academic education are modified to incorporate vocational applications"

CURRICULUM ALIGNMENT

". . . vocational and academic classes reinforce one another, both laterally and sequentially"

RESTRUCTURED SCHOOLS

". . . a curriculum [formed] around an occupational specialty . . . depending on close alliances with the business community"

[7]Adapted by the Kansas Competency-Based Curriculum Center, from Schmidt, B. June, Curtis R. Finch, and Susan L. Faulkner. *Integrating Vocational and Academic Education: A Practitioner's Guide.* (Berkley, California: NNCC 1992).

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Administrative Practices and Procedures That Facilitate the Integration Process

- Link professional development activities with the establishment of a teacher team
- Allow teachers to teach teachers
- Delegate responsibility for integration through specific assignments
- Schedule creatively to allow teachers time to benefit by sharing information
- Empower teachers so that they become "owners" of the integration process

Beginning Curriculum Changes in the School District

Some of the curriculum changes require action by the school district as a whole, while others must be initiated and carried out at each high school. We make the following recommendations for initiating curriculum changes within the school district:

DISTRICT-LEVEL TASKS

1. The action team should develop the sequence of courses that covers the core competencies.
2. Appropriate representatives from the technical areas (i.e., business, drafting) should work with the postsecondary representatives to establish the courses covering the technical proficiencies.

HIGH-SCHOOL–LEVEL TASKS

1. Each high school should begin to modify its curriculum in every discipline:

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a) Teachers should begin to use integrated/applied learning strategies.

b) Lower-level courses should be dropped from the curriculum.

c) Alternative delivery modes should be investigated (e.g., team teaching, block scheduling, etc.).

2. High school counselors must become familiar with the curriculum changes being made so that they can place appropriate students in the classes.

CHAPTER EIGHT

Involving Business and Industry

Activities to Involve Business and Industry

Whose Responsibility Is It?

Involving business and industry in the Tech Prep program is one of the keys to its success. Remember that one of the goals of a Tech Prep program is to bridge the gap between the classroom and the workplace. There are many ways to involve business and industry personnel in the program. Typical activities are discussed below.

Activities to Involve Business and Industry

1. Representatives on the steering committee
2. Representatives on work teams
3. Validation of proficiencies
4. Speakers within the classroom
5. Curriculum writing
6. Classroom/work exchanges
7. Shadowing/mentorship/internship
8. Apprenticeship

REPRESENTATIVES ON THE STEERING COMMITTEE

Most Tech Prep programs have representatives from business and industry serving on the steering committee. Not only is it helpful to have their expertise in designing the program, but it is also beneficial to attain their "buy-in" early on in the project.

REPRESENTATIVES ON THE WORK TEAMS

For a review of the three proficiency levels (core, technical, and specialty) see pages 17–18.

As the consortium steering committee creates various work teams to design and implement the program, you will find an invaluable resource in business and industry representatives. Including these individuals on the work teams provides you with their expertise and fosters their involvement.

VALIDATION OF PROFICIENCIES

It is important to know that the proficiencies addressed in the program represent current workplace skills. Representatives from various fields can help validate the proficiencies within the program. When asking for validation of proficiencies be sure to ask a worker

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who is currently employed in that position. Sometimes managers are removed from the everyday activities of the employee.

SPEAKERS WITHIN THE CLASSROOM

Most business and industry personnel are happy to talk with students about a given topic. We suggest providing them with specific information about what topic you would like them to address, what time is available, and who the audience will be.

CURRICULUM WRITING

Caution!

Business representatives are used to serving on teams that are "active" rather than teams that discuss and debate. Be sure your teams are action oriented; this will help you maintain the involvement of business and industry.

Business and industry personnel are very familiar with workplace skills. Tasks that are everyday business activities can make excellent learning experiences for students. For example, dealing with a full "in basket" is a typical business task. Students can learn a great deal about decision making by attempting to handle their own "in basket." Getting employees involved in writing curriculum is an excellent way to modify the classroom. This can be done through the consortium or through an individual school.

CLASSROOM/WORK EXCHANGE

Suppose that teachers could exchange places with employees of local businesses. Imagine the walls that would drop after spending a day in a totally new job. Such an exchange program should be well defined in advance; for example, the length of exchange and duties of each person on the "new" job should be determined.

SHADOWING/MENTORSHIPS/INTERNSHIPS

When people think of shadowing, mentorships, and internships, they typically think of students. It would be just as powerful for teachers and staff to participate in these kinds of programs. Before teachers will recommend an activity to students, they must believe it is worthwhile, and trying it themselves may help convince them.

APPRENTICESHIPS

Business and industry personnel are essential to developing effective apprenticeship programs. It is difficult for some educators to "let go

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of the power" in this type of education experience, but it is worth the effort. Many trade areas have specific apprenticeship requirements. You should consult local trade unions for additional information.

Whose Responsibility Is It?

Educators often want to know whose responsibility it is to get business and industry involved in the Tech Prep program. Some tasks can be handled by the consortium coordinator, while some must be taken on by the local district.

Use the form on page 121 to identify local organizations and businesses to contact about Tech Prep. The business and industry survey on page 122 can be used after a presentation has been given to a chamber of commerce, optimist club, etc., to obtain names of people who are willing to help your Tech Prep efforts.

Business and industry representatives who serve on the steering committee or work teams are typically appointed by the consortium. The consortium can also handle validating the proficiencies. Other activities, such as speakers within the classroom, curriculum writing, classroom/work exchanges, and shadowing/mentorships/internships, can be initiated by a local school. The Tech Prep action or building team should probably take responsibility for initiating these kinds of activities.

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EXPANDING INVOLVEMENT IN TECH PREP

NAME OF GROUP/ORGANIZATION	CONTACT PERSON	PHONE

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BUSINESS AND INDUSTRY SURVEY

The Tech Prep project is building technical education programs that begin in high school and culminate with a two-year associate degree or certificate. The program includes a sequence of courses that are grounded in workplace application. In order to build an effective program, ***we need your input.*** Would you, or someone at your organization, be willing to help us bring education and the workplace closer together?

Please check any of the areas below in which your organization would be willing to help us. Thanks!

_____ Establish work competencies/proficiencies for a program.
Is there a particular area of specialty? (check one or more)

_____ General Workplace Skills
_____ Merchandising
_____ Industrial Technologies
_____ Human Services
_____ Business Technologies
_____ Engineering Technologies
_____ Health Technologies
_____ Other _____

_____ Validate work competencies/proficiences.

_____ Provide an internship for a teacher.

_____ Provide an internship for a student.

_____ Allow students and educators to visit your workplace.

_____ Work with a school to help the teachers implement workplace applications in the classroom.

_____ Serve as a guest speaker.

_____ Serve as an adviser to a local school.

_____ I am unable to help you right now; however, I would like to be kept informed about the project.

May we list your organization in our brochures as supporting the Tech Prep project?
Please let us know how we can reach you.

Name _____ Business/Organization _____

Mailing Address _____ Phone _____

Tech Prep Consortium JCCC
12345 College Boulevard Overland Park, Kansas 66210
(913) 469–8500, ext. 4143

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Introduction to Tech Prep

CHAPTER 1

The Need for a Tech Prep Program

CHAPTER 2

Understanding the Tech Prep Program

The Planning Phase

CHAPTER 3

The Tech Prep Consortium

CHAPTER 4

Defining the Tech Prep Program

CHAPTER 5

Organizing the Tech Prep Program

The Development Phase

CHAPTER 6

Inservice

CHAPTER 7

Curriculum Changes

CHAPTER 8

Involving Business and Industry

The Implementation Phase

CHAPTER 9

Promoting the Tech Prep Program

CHAPTER 10

Evaluating the Tech Prep Program

CHAPTER NINE

Promoting the Tech Prep Program

Designing the Promotion Campaign

Designing the Promotion Campaign

The program must be promoted by the consortium and the local schools. Each member of the consortium should be promoting the Tech Prep program in the home district. The promotion work team should coordinate consortium efforts to promote the Tech Prep program. The action and building teams should also be working on promoting the program within the districts.

The process of designing a promotion campaign is somewhat complex. Addressing the questions below should help focus promotion efforts, whether they are performed by the consortium or a local school.

1. What audience do you want to reach?
2. What do you want the audience to do or believe?
3. What does the audience already know/believe?
4. How can you reach the audience?

WHAT AUDIENCE DO YOU WANT TO REACH?

The first step in any promotion campaign is to identify your audience. Usually, there are several groups of people you will want to reach. Identifying as many of these groups as possible will make the message easier to design.

Typical audiences for Tech Prep promotion campaigns include the following:

- Teachers
- Students
- Parents
- Business and industry personnel
- Local community members
- School board members
- Chamber of commerce executive board

WHAT DO YOU WANT THE AUDIENCE TO DO OR BELIEVE?

Ultimately, the goal of a promotion campaign is to get some action or change in belief from your audience. When identifying the

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outcome(s) you want from your audience, be as specific as you can. Remember, it is possible to have more than one outcome for a single audience.

Typical outcomes of a Tech Prep promotion campaign may include the following:

Teachers: Adapt teaching strategies to include application and integration.

Students: Enroll in the Tech Prep program.

Parents: Encourage their children to enroll in Tech Prep.

School board: Actively promote the Tech Prep program within the district.

WHAT DOES THE AUDIENCE ALREADY KNOW/BELIEVE?

Finding out what your audience already knows about a Tech Prep program and related issues is helpful in designing the campaign. You need to know at least whether to expect a hostile or supportive reception! Below are three common methods for gaining this information:

- Survey (written, phone)
- Informal networking (talking with community representatives)
- Local environmental scan (newspaper, radio, television editorials)

The method used to identify what the audience already knows should fit your local situation. For example, some small school districts are keenly aware of their parents, students, and local community's perceptions. Consequently, a less formal data-collection process is necessary.

HOW CAN YOU REACH THE AUDIENCE?

It is important to identify methods that can be used to reach your audiences. You may be able to reach more than one audience with the same method. Typical methods used to reach Tech Prep audiences include:

- Public presentations
- Written communication (brochures, newsletters, etc.)
- Newspaper articles
- Special events
- Radio announcements

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Once you have identified the audience, desired outcome, perceptions, and methods, you can begin to design the activities to accomplish your goal.

For example:

AUDIENCE: Students

DESIRED OUTCOME: Enroll in Tech Prep

PERCEPTIONS: Unaware of Tech Prep, unaware of employment options

METHODS: Video, student newspaper, announcements, posters, counselor conferences, teacher encouragement, Tech Prep activities

Caution!

Some promotion efforts should be performed by the consortium, while others must be accomplished by each school district. A video, for example, is usually a consortium product, while an advertisement in the school newspaper might be local to each high school.

The promotion work team should decide which activities it will perform and which might be performed by the local schools

The final piece of the promotion campaign is to design and "send" the message itself. ***Identify which of the methods you wish to use in the campaign.*** This may be done by the consortium promotion work team or by the action/building teams. For each message to be designed you should answer the questions below:

1. What steps must be taken to create this message?
2. Who will be responsible for this activity?
3. What is the time frame for completing this activity?

Example: Audience = Students Method = Video

What steps must be taken to create this message?

a) obtain/create video
b) identify which students will see video
c) identify when students will see video
d) plan feedback/discussion

Who will be responsible for this activity?

a) media coordinator will secure the video
b) assistant principal will coordinate identification of students and schedule for viewing video
c) teachers will run feedback session

What is the time frame for this activity?

a) video selected by November
b) identification of students and viewing schedule completed by December
c) viewing and feedback sessions during February

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PROMOTION WORKSHEET

STEP 1: IDENTIFY THE AUDIENCES YOU WANT TO REACH IN PROMOTING YOUR PROGRAM

STEP 2: IDENTIFY THE OUTCOMES YOU WANT EACH AUDIENCE TO ACHIEVE

AUDIENCE	OUTCOME(S)

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PROMOTION WORKSHEET

STEP 3: IDENTIFY WHAT YOUR AUDIENCES ALREADY KNOW/BELIEVE ABOUT THE TECH PREP PROGRAM AND RELATED ISSUES

AUDIENCE	LEVEL OF KNOWLEDGE

STEP 4: IDENTIFY THE METHODS AVAILABLE TO YOU FOR PROMOTING THE TECH PREP PROGRAM

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PROMOTION WORKSHEET

AUDIENCE:
DESIRED OUTCOME:
PERCEPTIONS:
METHOD:

AUDIENCE:
DESIRED OUTCOME:
PERCEPTIONS:
METHOD:

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PROMOTION WORKSHEET

Audience _____ Method _____

What steps must be taken to create this message?
Who will be responsible for this activity?
What is the time frame for completing this activity?

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CHAPTER TEN

Evaluating the Tech Prep Program

Answering Key Questions about Evaluating Tech Prep

How Can Immediate Gains Be Measured?

Evaluation is an important piece of any reform process. While we are not evaluation experts, we do want to introduce some of the issues that you will deal with as you evaluate Tech Prep. We strongly advise consulting with evaluation experts in designing an evaluation plan.

Answering Key Questions about Evaluating Tech Prep

Organizers of Tech Prep programs that began many years ago are just now becoming able to draw conclusions about the effectiveness of their programs. It is important to generate some baseline data on your students and programs so that you will have a comparison point.

There are several key questions to be answered in designing an evaluation plan for Tech Prep. These questions should be used by the evaluation work team.

Listed below are four questions that are discussed briefly in this section of the chapter.

1. How will the data be used?
2. What data elements will be collected?
3. Where is the data available?
4. How will the data be maintained?

HOW WILL THE DATA BE USED?

We suggest that you discuss what will be done with the results of your evaluation. Is the evaluation being conducted for federal, state, or local administrative reporting and/or local promotion of the program? Knowing how the data will be used will help assure that you collect the appropriate data.

WHAT DATA ELEMENTS WILL BE COLLECTED?

Generally, you will want to collect some demographic data about the students in the program. This will help you describe your population and make comparisons to other populations. You may also want to collect academic performance indicators on students (e.g., test

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scores, grades). These can be used to show increased student performance. Consider the availability of pre- and posttest scores. Another kind of data you may want to collect is descriptive data from students—for example, a measure of how they feel about the program.

WHERE IS THE DATA AVAILABLE?

Consider where you will be able to obtain the data you want to collect. Some information will be housed in the school district office or the high school itself. Other information may need to be collected from students in a survey format.

HOW WILL THE DATA BE MAINTAINED?

Consider what resources are available for maintaining the data. Can it be kept on a computer system or will it be on paper? The answer to this question may determine how much data you collect and what kinds of reports you can generate.

How Can Immediate Gains Be Measured?

Schools can begin to measure changes by monitoring some local data elements. We suggest that each high school keep track of the following kinds of information:

1. Enrollments in courses affected by curriculum changes
2. Number of students enrolled in science and math courses
3. Sections of study hall offered
4. Student grades
5. Standard tests taken by students
6. Students' and teachers' perceptions of the changes
7. Parents' perceptions of the changes

All of this information can be reported to local audiences such as the board of education, parents, community groups, and others.

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EVALUATION WORKSHEET

1. Identify how the data you collect will be used.

2. List the data elements you will collect and identify the source for each element.

DATA ELEMENT	SOURCE

3. Describe how the data will be maintained.

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APPENDIX A

Definitions

Action team: A team created within a school district to handle decisions and activities that effect the school district as a whole.

AIT: The Agency for Instructional Technology, which produces curriculum packages (e.g., Applied Communication & Workplace Readiness).

Application teaching strategies: Those teaching strategies that promote the learning of practical application, responding to the question; When will I ever use this?

Applied academics: Prepackaged curriculum that teaches traditional academic subjects in a hands-on fashion.

Articulation agreement (Tech Prep): An agreement that lays out a sequence of courses bridging the high school and the postsecondary institution. Articulation agreements are typically focused on career programs.

Articulation team: A group of faculty (secondary and postsecondary) who are responsible for developing articulation agreements.

Bridge curriculum team: A group of postsecondary educators who are responsible for designing the bridge program.

Building team: A group of high school teachers and staff members responsible for implementing Tech Prep within a high school.

Business and industry involvement work team: A work team, created by the Tech Prep steering committee, that is responsible for getting business and industry representatives involved in the Tech Prep project.

Career cluster: A group of related occupations in which there are two-year degree or certificate programs available.

Consortium (Tech Prep): A group of schools that work together to develop a Tech Prep program. It must have a minimum of one secondary and one postsecondary school.

CORD: The Center for Occupational Research and Development. Produces applied curriculum packages (e.g., Applied Mathematics, Applied Biology/Chemistry, Principles of Technology).

Core proficiencies: The required skills in mathematics, science, communication, and technology required for all Tech Prep students.

Curriculum work team: A team created by the Tech Prep steering committee to oversee curriculum changes that effect all consortium schools.

Evaluation work team: A team created by the Tech Prep steering committee to build and implement an evalution plan.

Integration teaching strategies: Those teaching strategies that build connections among subjects and disciplines (e.g., biology and chemistry, history and mathematics).

NNCC: National Network of Curriculum Coordination—A federally funded agency that conducts research vocational programs.

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Neglected majority: Secondary students who are enrolled in general education courses.

Postsecondary school: A community college or technical school.

SCANS: Secretary's Commission on Achieving Necessary Skills.

Sequence of courses: A nonduplicative progression of courses recommended for Tech Prep students. Sequence includes academic and technical courses on the secondary and postsecondary levels.

Specialty proficiencies: The skills required for successful employment in a specific occupation.

Steering committee (Tech Prep): The main committee responsible for the implementation of a Tech Prep program. Members typically include at least one representative from each member of the consortium as well as business and industry representatives.

Technical proficiencies: The introductory skills within a career cluster or program.

Tech Prep: A technical education program beginning in high school and culminating with an associate degree or two-year certificate.

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APPENDIX B

Resources

This list represents some of the resources available on Tech Prep and related topics.

Bottoms, Gene, Alice Presson, and Mary Johnson. *Making High Schools Work Through Integration of Academic and Vocational Education.* Atlanta, Georgia: Southern Regional Education Board, 1992.

Chew, Catherine. *Tech Prep & Counseling: A Resource Guide.* Madison, Wisconsin: Center on Education and Work, University of Wisconsin, 1993.

Crabbe, Anne Borland. *A Collaborative Approach to Tech Prep.* Hamlet, North Carolina: Richmond Community College, 1993.

Hull, Dan. *Opening Minds, Opening Doors: The Rebirth of American Education.* Waco, Texas: CORD Communications, 1993.

———. *The Tech Prep Resource Series Getting Started in Tech Prep.* Waco, Texas: CORD Communications, 1992.

Hull, Dan, and Dale Parnell. *Tech Prep Associate Degree: A Win/Win Experience.* Waco, Texas: CORD Communications, 1991.

Illinois State Board of Education. *Illinois Tech Prep Planning Strategies.* Springfield, Illinois: Illinois State Board of Education, 1991.

Law, Charles. *Tech Prep Education: A Total Quality Approach.* Lancaster, Pennsylvania: Technomic Publishing Co., Inc., 1994.

Occupational Outlook Quarterly. Washington, D.C.: Bureau of Labor Statistics.

Parnell, Dale. *Logolearning: Searching for Meaning in Education.* Waco, Texas: CORD Communications, 1994.

SCANS. *Learning a Living: A Blueprint for High Performance.* Washington, D.C.: Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, June 1991.

———. *What Work Requires of Schools: A SCANS Report for America 2000.* Washington, D.C.: Secretary's Commission on Achieving Necessary Skills, U.S. Department of Labor, June 1991.

U.S. Department of Labor Employment and Training Administration. *School-to-Work Connections: Formulas for Success.* Washington, D.C.: U.S. Department of Labor Employment and Training Administration, 1992.

Wacker, Gabrielle Banick. *Tech Prep: Effective & Promising Practices Guide.* Madison, Wisconsin: Center on Education and Work, University of Wisconsin, 1993.

Wirth, Arthur G. *Education and Work for the Year 2000: Choices We Face.* San Francisco, California: Jossey-Bass Inc., 1992.

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We recommend contacting the following resource centers:

National Center for Research in Vocational Education
University of California at Berkeley
1995 University Avenue, Suite 375
Berkeley, CA 94704
(800) 762-4093

National Network for Curriculum Coordination
Sangamon State University
Room K-80
Springfield, IL 62794-9243
(217) 768-6375

National Tech Prep Network
Center for Occupational Research & Development
P.O. Box 21689
Waco, TX 76702-1689
(800) 972-2766

Office of Vocational and Adult Education
U.S. Department of Education
Switzer Building
600 Independence Ave. S.W.
Washington, D.C. 20202
(202) 205-5440

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APPENDIX C

Tech Prep Checklist

TECH PREP CHECKLIST

ORGANIZING	RESPONSIBILITY	COMPLETED	IN PROCESS	PLANNED
Has a consortium been established?	Leaders of participating institutions			
Has a steering committee been established?	Leaders			
Is there a coordinator/director of the consortium?	Steering committee			
Have the functions of the consortium been identified?	Steering committee			
Has funding for the consortium been secured?	Steering committee			
Have conditions for consortium membership been identified?	Steering committee			
Has a written agreement been developed and signed?	Steering committee			
Have vision and mission statements been developed?	Steering committee			
Have program parameters been set?	Steering committee			
Have career clusters been identified for development?	Steering committee			
Have work teams been created?	Steering committee			
Curriculum	Steering committee			
Evaluation	Steering committee			
Promotion	Steering committee			
Business and Industry	Steering committee			
Has an action team been created?	Action chair			
Is its goals clear?	Action chair			
Does it have a plan?	Action chair			
Is it meeting regularly?	Action chair			
Have building teams been created?	Building chair			
Are their goals clear?	Building chair			
Do they have a plan?	Building chair			

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TECH PREP CHECKLIST (continued)

ORGANIZING	RESPONSIBILITY	COMPLETED	IN PROCESS	PLANNED
Are they meeting regularly?	Building chair			
Have articulation teams been created?	Postsecondary dean			
Have application/integration teams been created?	Postsecondary dean			
CURRICULUM				
Have core proficiencies been developed?	Curriculum work team			
Have the core proficiencies been validated by business and industry?	Curriculum work team			
Have the career clusters been defined?	Steering committee			
Has a sequence of courses (for the core proficiencies) been created?	Action/building teams			
Have applied/integrated teaching strategies been initiated?	Action and building teams			
Applied academics				
Team teaching				
Curriculum alignment				
Restructured schools				
PROMOTION				
Has the promotion work team developed a plan?	Promotion work team			
Have introductory promotion materials been produced?	Promotion work team			
Are the member schools being supplied with appropriate promotional materials?	Promotion work team			
Are local audiences being made aware of Tech Prep?	Action and building teams			

TECH PREP CHECKLIST (continued)

EVALUATION	RESPONSIBILITY	COMPLETED	IN PROCESS	PLANNED
Has the evaluation work team designed a plan?	Evaluation work team			
Are member schools familiar with the evaluation plan?	Evaluation work team			
Are efforts being made to establish baseline data?	Action and building teams			
BUSINESS AND INDUSTRY INVOLVEMENT				
Is the business and industry involvement work team actively recruiting business representatives to be involved in Tech Prep?	Business and industry involvement work team			
Representatives on steering committee				
Representatives on work teams				
Validating proficiencies				
Are local schools involving business and industry in their efforts?	Action and building teams			
Classroom speakers				
Curriculum writing				
Classroom/work exchange				
Shadowing/mentorships/internships				
INSERVICE				
Have the key players in the consortium been inserviced?	Director/coordinator			
Have the member schools identified local groups to receive inservice?	Action team			
Have arrangements been made to provide this inservice?	Director/coordinator			

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TECH PREP CHECKLIST

	RESPONSIBILITY	COMPLETED	IN PROCESS	PLANNED

APPENDIX D

Core Proficiencies

The following proficiencies were identified by the Tech Prep Associate Degree Consortium of Johnson/Douglas Counties.

CORE PROFICIENCIES

SCIENCE

1. **Demonstrate the science process skills.**
   The student should be able to correctly observe, analyze data, conduct an experiment, etc.
2. **Demonstrate an acceptable level of specific content.**
   The student should be able to demonstrate systematics, biological processes, physical principles, etc.
3. **Apply the science process skills to investigate problems.**
   The student should design and/or perform laboratory experiments to investigate various phenomena.
4. **Recognize the interrelationships of science, technology, health, and the environment.**
   Interrelationships should provide the student with an understanding of how technology, environmental, and health industries draw upon scientific principles to resolve problems. Courses should incorporate computer usage.
5. **Work independently, collaboratively, and safely.**
   Courses should include exercises that allow both independent and collaborative experiences. Safety concepts and principles should be incorporated throughout the courses.

MATHEMATICS*

1. **Apply mathematical problem-solving strategies to problems both within and outside mathematics.**
   Understand algebraic concepts, geometry concepts, functions, probability and statistics, and discrete mathematics.
2. **Recognize mathematics as an integrated whole and make connections among mathematical topics, between mathematics and other disciplines, and between mathematics and real-world applications.**
3. **Communicate mathematically using the language and symbols of mathematics.**
   Understand estimation, formal proofs, and inductive/deductive reasoning.

* All Tech Prep students should have, as a minimum, preparation for college algebra before entering the postsecondary portion of the Tech Prep program.

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TECHNOLOGY

1. **Understand the role of technology in today's marketplace.**
   Understand the impact of technology advancement on business, industry, and the job market. Technologies might include artificial intelligence, biogenetics, etc.

2. **Demonstrate computer literacy skills.**
   Understand the components of computers.
   Demonstrate software application skills.
   Understand basic file-management techniques for computers.

3. **Comprehend the impact of technology on various social systems.**
   Understand the impact of technology on the economy, public safety, and family life.

COMMUNICATION

1. **Comprehend and interpret written, oral, and visual language in a variety of forms for real-life purposes.**
   Understand forms of communication specific to the workplace. For example, forms, diagrams, manuals, graphs, directions, correspondence, résumés, presentations, etc.
   Recognize the purpose/intent of a variety of forms of communication.

2. **Express ideas through written, oral, and visual language for a variety of real-life purposes and audiences.**
   Apply a process approach to express ideas.
   Produce a variety of forms of communication appropriate to purposes and audiences.

3. **Demonstrate interpersonal skills through effective interaction with others.**
   Work closely with others to accomplish tasks.
   Communicate appropriately in pressure situations.
   Deal effectively with the public.

4. **Develop lifelong communication skills necessary to function productively in diversified work groups.**
   Assess and synthesize information.
   Apply critical and inventive thinking when problem solving.
   Use current technology systems as tools.

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WORKPLACE

1. **Manage resources of time, money, materials, and energy.**
2. **Acquire, organize, analyze, and communicate information.**
3. **Utilize, maintain, and troubleshoot current technologies.**
4. **Analyze social, organizational, and technological systems.**
5. **Employ the interpersonal skills of teamwork, leadership, negotiating, and working with diverse populations and cultures.**
6. **Apply the critical thinking skills of decision making, problem solving, creative thinking, and reasoning.**
7. **Display the personal qualities of responsibility, self-esteem, sociability, self-management, and integrity.**
8. **Recognize social and environmental issues in order to protect, enhance, and preserve the quality of life.**

CAREER DEVELOPMENT

1. **Demonstrate the role of self-knowledge in career development.**
   Identify values, interests, abilities, skills, work environment factors, and life roles and constraints as they relate to an individual's career life.
2. **Demonstrate an awareness of the world of work, career opportunities, and career pathways.**
   Engage in career-related experiences (career fairs, shadowing, internships, volunteering, informational interviewing, etc.)

   Demonstrate knowledge of career rewards and requirements.

   Recognize trends in future jobs, the economy, and the labor market.

   Assess and use opportunities for lifelong learning.

   Conduct research using various resources (print, video, etc.).
3. **Apply the critical thinking skills of decision making and goal setting as they relate to career development.**
   Identify effective decision-making strategies.

   Use decision-making strategies to set career life-goals.
4. **Develop personal and professional employment strategies.**
   Demonstrate effective employment strategies (résumé writing, interviewing, job search techniques, etc.).

   Demonstrate the ability to maintain employment.

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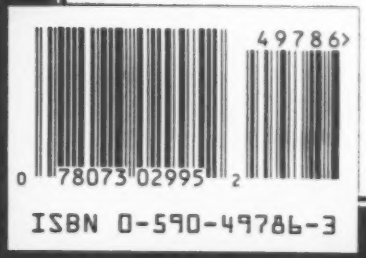

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